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PAESTUM

discovery of the first ancient Greek frescoes

XUM

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TREASURES
OF
WORLD ART

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Mulla
the Onion Eater

One of Pakistan's popular folk heroes is a man said to have lived some four centuries ago. He is Mulla the Onion Eater, a court jester who earned this name by his fondness for a vegetable more often associated with tears than laughter. The fact that Mulla Do Piaza, ("do piaza" : two onions) may not even have existed matters little to Pakistanis, who still chuckle over stories of his japes and quips. To them he is a very real person, one who symbolizes the very essence of folk humour, and whose witty stories are frequently spiced with shrewd reflections and sharp comments. Mulla is traditionally associated with the 16th century Mogul court where his sallies and shafts of wit delighted the great emperor Akbar himself. Mulla's humour was not dissimilar to that of Nasredin, the famous Turkish-Iranian storyteller-jokester (see "Unesco Courier", March 1969). Here, the jovial jester is depicted in an 18th century portrait, an exceptional work of Mogul art, which seldom attempted caricature. A delicately executed miniature, (8 in. by 5), it is now in the Lahore Museum.

XUM

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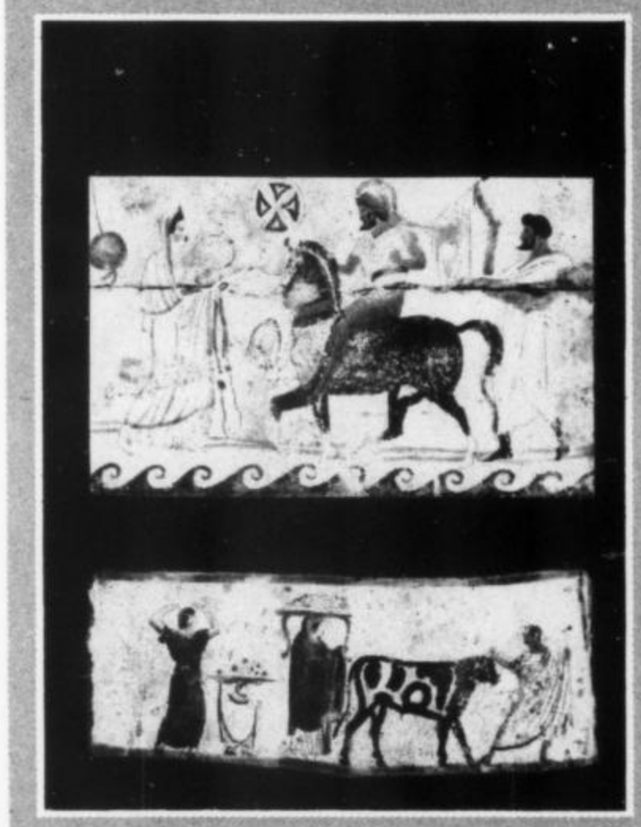

Cover

In summer, 1968, the first Greek frescoes known to have survived to the present day were uncovered in a burial ground near the famed temples of Paestum in the Italian province of Lucania. They were painted in about 480 B.C. In 1969, further tombs were discovered, also ornamented with many frescoes. These were the work of Lucanian artists, but were in the same Greek style or showed evidence of a strong Greek influence (see article page 4). The fresco reproduced in the upper half of our cover depicts a warrior being welcomed home by a woman who is, perhaps, his wife since she wears the draped headdress reserved for married women. The standard indicates that this is a Lucanian work as the ancient Greeks never carried standards. For details of the lower fresco see caption on page 8.

Photos Unesco - J. Chevalier

XUM

Photos Unesco - J. Chevalier

The "Temple of Neptune" (below) was raised in Paestum, south of present-day Naples, in the mid-5th century B.C. Modelled on the Parthenon at Athens, it is one of the few surviving buildings of Poseidonia (the Greek name for Paestum). The city was founded at the end of the 7th century B.C. by Greek colonists, and was captured by the Lucanians towards the end of the 5th century B.C. A vast burial ground has now been discovered near the Temple of Neptune, and thousands of graves have been unearthed (bottom photo). Some 50 of these tombs contain paintings in a remarkable state of preservation—the only classical Greek frescoes ever found.

Photo © René Burri - Magnum, Paris

PAESTUM

discovery of the first ancient Greek frescoes

by Michel Conil Lacoste

A few fragments of terra cotta, some polychrome traces on pieces of plaster rubble, occasional references to Polygnotus, Zeuxis and Euphranor are all that has come down to us of the great flowering of Hellenic painting, in the 5th and 4th centuries B. C., described by Pliny the Elder.

The great painted frescoes of the classical era were doomed to destruction at the hand of man. The ravages of war and Roman plundering, coupled with the fragility of the surfaces used by painters of classical times, combined to deprive us of the paintings that once adorned the walls of Propylaea and private homes.

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MICHEL CONIL LACOSTE, *French art critic and historian, is a regular contributor to literary and art reviews, and is the author of "La Sculpture Européenne d'Aujourd'hui" (European Sculpture Today) published by Gunther, Stuttgart, 1966. From 1967 to 1969 he was head of the Unesco Section of the International Campaign for Florence and Venice, and is co-author with L.J. Rollet-Andriane, of "The Unesco Report on Venice" (published in Italian by Mondadori, Milan, 1969) and shortly to appear in French (Robert Laffont, Paris). He is now a member of Unesco's Division of International Dissemination of Culture.*

XUM

One of the most surprising paintings found at Paestum is the diver (below) decorating the roof slab of the oldest of the painted tombs. The scene below is a detail of the full painting which shows the diver silhouetted against a vast sweep of sky in a coastal setting.
The walls of the same tomb are covered with a series of beautiful paintings of a Greek funeral banquet, showing ten young men chatting, drinking and listening to music (above). Painted about 480 B.C., this type of banquet painting was known to the world only through the painted vases of Athens.

XUM

RESURRECTED CHARIOTS IN THE GREEK STYLE

The Lucanians of the 4th century B.C. decorated the walls of the tombs in the Paestum burial ground with paintings in the Greek style. Themes of battle and victory are numerous: the proud warrior on his charger (left); a four-in-hand chariot race (below right); a winged victory in a chariot (above right). In this work, branches loaded with pomegranates (left of painting) symbolize re-birth and the promise of a future life. Lucanian artists drew inspiration from the Greek vases of Taranto in southern Italy, but unlike their Greek counterparts, they sought for more striking effects by a greater use of contrasting colours. Below, these stone coffins discovered at Paestum are about 1.80 metres long and 1 metre wide (about 6 × 3 ft.). The 150 painted tomb walls of Paestum are regarded as one of the most remarkable archaeological discoveries of recent years.

Photos Unesco - J. Chevalier

PAESTUM *(Continued)*

Without direct knowledge of the paintings themselves, we can only have a small idea of what they were really like from ancient Greek vase paintings or even more regretfully, from certain weak copies by ancient Roman artists.

This at least was the position until one day in the summer of 1968 the sun of Paestum filtered into tomb No. 4 of a burial ground situated one mile to the south of the time-worn walls of this ancient Greek city in southern Italy. Uncovered by a systematic examination of the area carried out that summer, the tomb revealed wall paintings of extraordinary freshness, depicting scenes of funeral banquets and typically Greek rituals, that had lain there untouched for two and a half thousand years.

It was immediately evident that the paintings were totally different from the few Lucanian painted tombs previously brought to light in the vicinity. They closely resembled the themes depicted on Greek pottery of the classical period. On the two longer walls of the tomb the eye saw a double funeral banquet scene in red, black, yellow and blue. Ten bearded funeral guests, crowned with laurels, were reclining on a couch evoked by a single blue brush stroke. The painting shows the men listening to music and playing a game called *Kottabos* (which consisted of passing wine from one wine cup to another in a manner that called for great dexterity). The scene has erotic overtones. On the shorter walls a flutist leads the funeral cortege and a cup bearer offers wine.

The harmony of design and the delicate use of colour with little modulation of tone confirm the advanced development of painting techniques of the Greek artists of Paestum. The frescoes are especially significant in their portrayal of ancient Greek rites for the living and the dead.

A most unusual scene is portrayed on the inner face of the slab that forms the covering of the tomb. Here, poised between sky and sea, a young ephebe is shown executing a high dive from a narrow platform between two trees. Hence the name immediately given to the find: *tomba del tuffatore* ("The Tomb of the Diver").

Certain precise stylistic characteristics, particularly the representation of the athlete's eye and his musculature, as well as the shape of a vase found in the tomb, have enabled Professor Mario Napoli, Superintendent of Antiquities for the Salerno-Paestum district, in charge of the excavations, to date it to about 480 B. C.

At that time Paestum was still called Poseidonia. Situated about 80 kilometres (50 miles) south of present day Naples on the Gulf of Salerno, it was one of the most important cities of Magna Graecia. Its institutions, language, religion, art were all Greek. The Lucanian mountain folk had not yet come down from the surrounding heights to drive out the Greek colonists. The paintings from the "Tomb of the Diver" are, therefore, stylistically, culturally and even politi-

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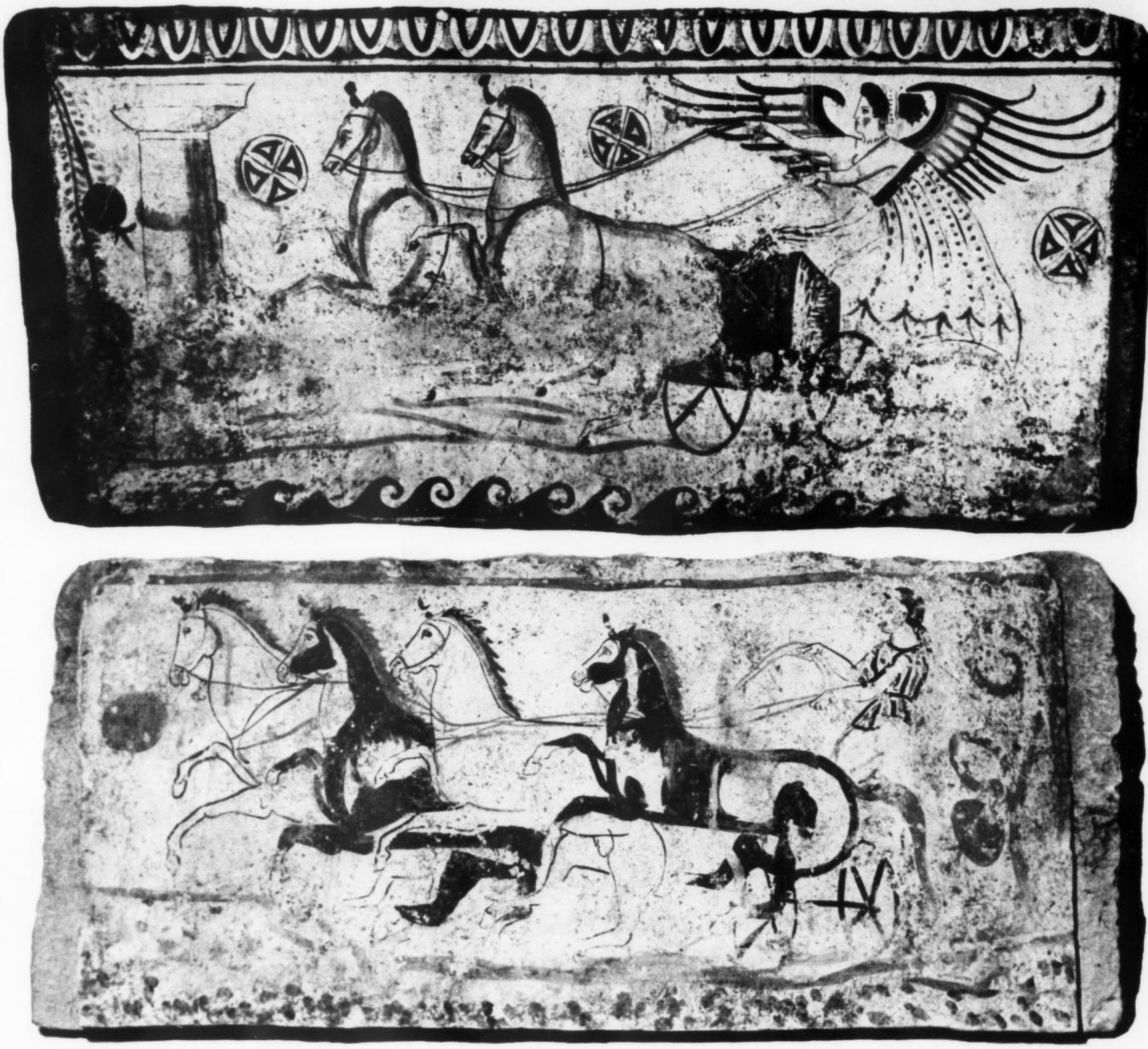

cally speaking Greek. There can be no doubt that they were painted by a Greek hand.

This was an unprecedented find. In the words of Superintendent Mario Napoli, it represents "the first and only Greek painting of the archaic or classical period found anywhere thus far." The same enthusiasm is shared by the world's leading experts on Greek art and archaeology.

In his contribution to the volume "La Grèce Classique" which has just appeared in the famous collection entitled "Univers des Formes", the French specialist of Greek art, François Villard, writes: "Until the most recent discovery at Paestum . . . of a painted tomb of astounding expressive power, dated around 480 B. C., the existence of no original Greek painting, even by a minor artist . . . had come to our knowledge."

There is another surprising aspect to this discovery: no tradition of tomb painting was formerly known to exist in ancient Greece. Painted tombs are found only from the 4th century B. C. onwards, and these only on the fringes of Magna Graecia, at Pont-Euxin, near Taranto and in Apulia where a much more geometric style was dominant. Etruscan funeral paintings had a more esoteric, ritual inspiration, quite different from the lively themes of the "Tomb of the Diver". However, tomb decoration seems to have been an established tradition in Lucania.

Faced with this puzzle, Superintendent Napoli and his colleagues have yet to reach agreement on two opposing interpretations. The first of these is that, while Paestum was still completely under Greek rule, a non-Greek inhabitant of the city, no doubt a notable, was accorded the honour of being buried in accordance with his native traditions. The second interpretation explains the existence of the tomb painting as an illustration of the Pythagorean notion of "ritual immersion". According to this view, the dead man would then have been a Greek member of a Pythagorean school in Paestum.

But there were further surprises in store for the Italian archaeologists. On July 12, 1969, the Superintendent learned that a farmer named Luigi Franco, while ploughing his artichoke field with an especially long blade, had struck the stone cover of another tomb, this time 300 metres (330 yards) north of the city walls.

This tomb was unpainted and empty. But, in the course of the three months' excavations that followed, 83 underground tombs were found within the same area. Of these, 50 were decorated with frescoes, more than thirty of which were well preserved. All but four or five of these tombs contained vases which were found to date from the 4th century B. C.—about 340 B. C.

Since each tomb had four painted walls (the roof slab in each case being unpainted) a total of 120 to 140 wall paintings of great antiquity were now available to the world in addition to the "Tomb of the Diver". Taken together they show evidence of a particular style which, if not strictly Greek, is at

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XUM

WORLD OF MYTH AND EVERYDAY LIFE

Paestum artists gave a distinctive new style to funerary painting by introducing scenes from country life and themes based on fantasy. Tomb painting, left, illustrates this dual originality. In the upper triangular section, Charon, the ferryman of the River Styx, a Greek mythological figure, has been transformed by a Lucanian painter into a female form receiving the spirits of the dead aboard the waiting craft. In the lower section (see also front cover), a figure leads a calf which is to be sacrificed in honour of the dead person. A woman carrying a dish of offerings on her head follows the animal, and behind her a young servant carries bread and pomegranates. A mourner completes the cortege. The figures recall typical Lucanian country folk such as might still be encountered in that region of Southern Italy today. Above right, winged griffons, mythological creatures that figured on 4th century B.C. Greek vases. Below right, country scene. The farmer's cart is outlined against a background of trees, a naturalistic touch rarely found in Greek art of the 4th century B.C.

Photos Unesco - J. Chevalier

PAESTUM *(Continued)*

least strongly marked by Hellenic influences, spiced with a lovely touch of local colour.

The walls of these new tombs, like those of the "Tomb of the Diver", have been transferred to the nearby museum, where they are being allowed to dry out slowly. On some of them can still be seen the marks made in the wet plaster by the ropes with which they were lowered into place. And when we are studying antique relics, traces of handling and techniques used, such as these, take us magically back in time until we can almost see the events unfolding before our eyes.

Apart from a few bones, little else was found in these 4th century B. C. tombs, except for some rare jewellery and a few vases. The walls of the tombs were pre-cut to the required dimensions from one or two metres in length and 90 cms in height (3 to 6½ ft. x 3 ft.). They were given a coat of fresh plaster and decorated probably at the last moment.

On all of them the principal figure is surrounded by a frame motif perhaps the work of the artist's assistant and applied with almost slap-dash haste. These motifs abound with streamers, floral designs, eggs and pomegranates, the latter a symbol of resurrection.

Sometimes this rather mechanical ornamentation constitutes the entire decoration—one tomb has as its only decoration an intertwined central design of the famous roses of Paestum.

It was in one of these latter tombs that the only signed vase was found. It bears the name of Python, who, along with Asteas, was the most famous painter of the jars with twisted twin handles for which Paestum was famous. It seems unlikely that one or both of these artists worked on the paintings themselves, but as yet there is no proof either way.

The actual figures have often been sketched several times as we can see if we examine the paintings under an oblique light. They depict a whole range of horsemen, combats between boxers or between Greek foot-soldiers known as *hoplites*, stag-hunting scenes, bulls, griffons and mythical birds. Others show women combing their hair under a canopy; even a set of armour and two leg plates have been considered of sufficient interest to constitute the only theme.

Scenes from Greek mythology, however, are the dominating theme: Charon ferrying the dead shades across the Styx for a fee; Hermes harnessed to a child's cart, etc. Archaeologists have thus far found three successive stages in this magnificent collection of paintings. On the one hand, the typical ancient Greek style, on the other Greek archetypes interpreted more or less freely in the Greek archaic style, and thirdly, a style obviously inspired by strong local influences.

Many archaeologists have been happy to devote years of their lives to reconstructing the walls of an ancient city, yard by yard, or in the painstaking study of potsherds which are important clues to the past. It is not given to every archaeologist to discover the undisturbed mummy of a Pharaoh or the treasures of Troy or Mycenae. The archaeologists of Paestum have been most fortunate indeed.

It will take years to complete the scientific study of their sensational find. They are certainly right when they say that the 140 wall paintings of Paestum, together with the five paintings of the 5th century sarcophagus, constitute "a great moment in the history of Greek painting." ■

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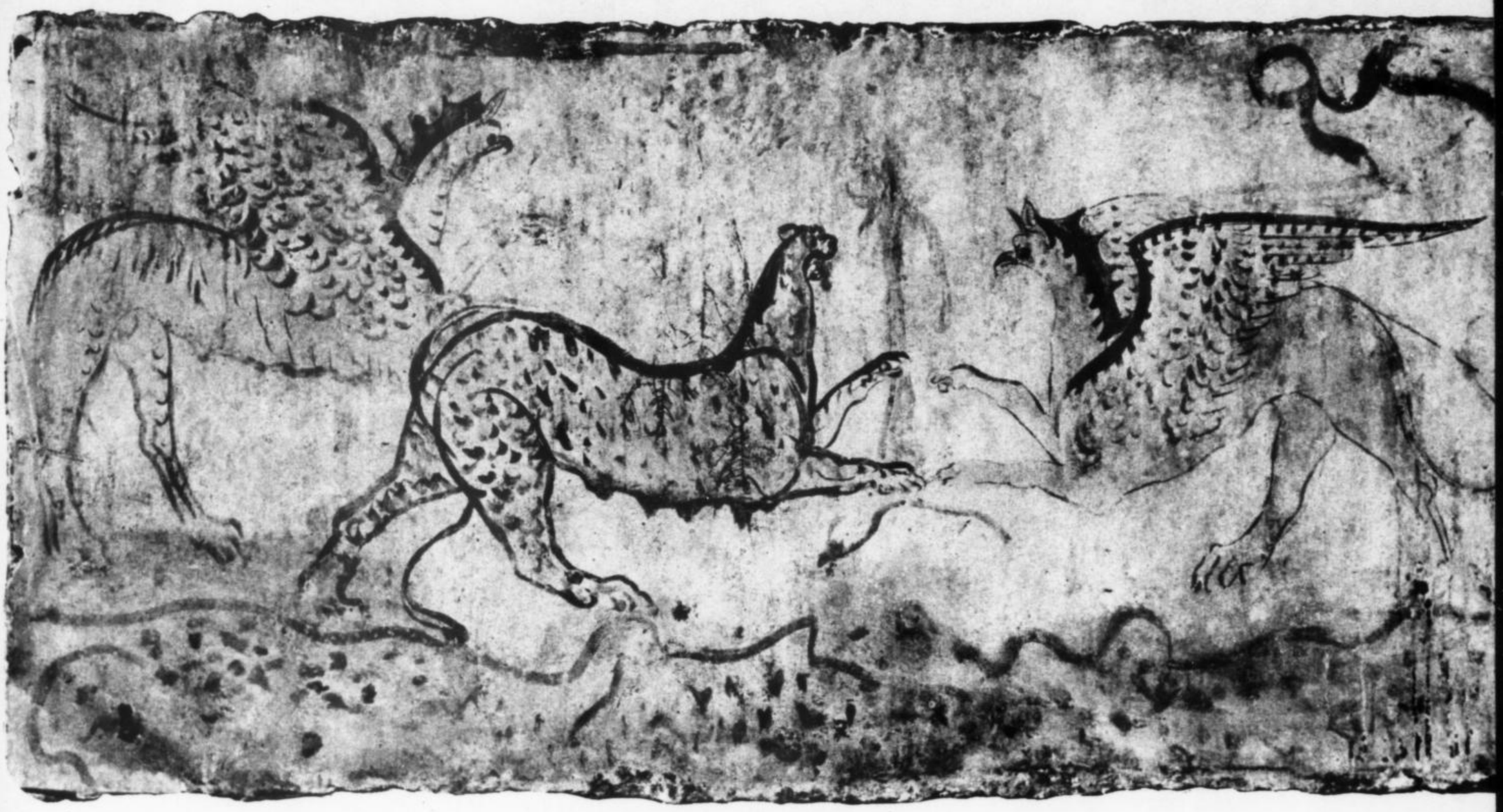

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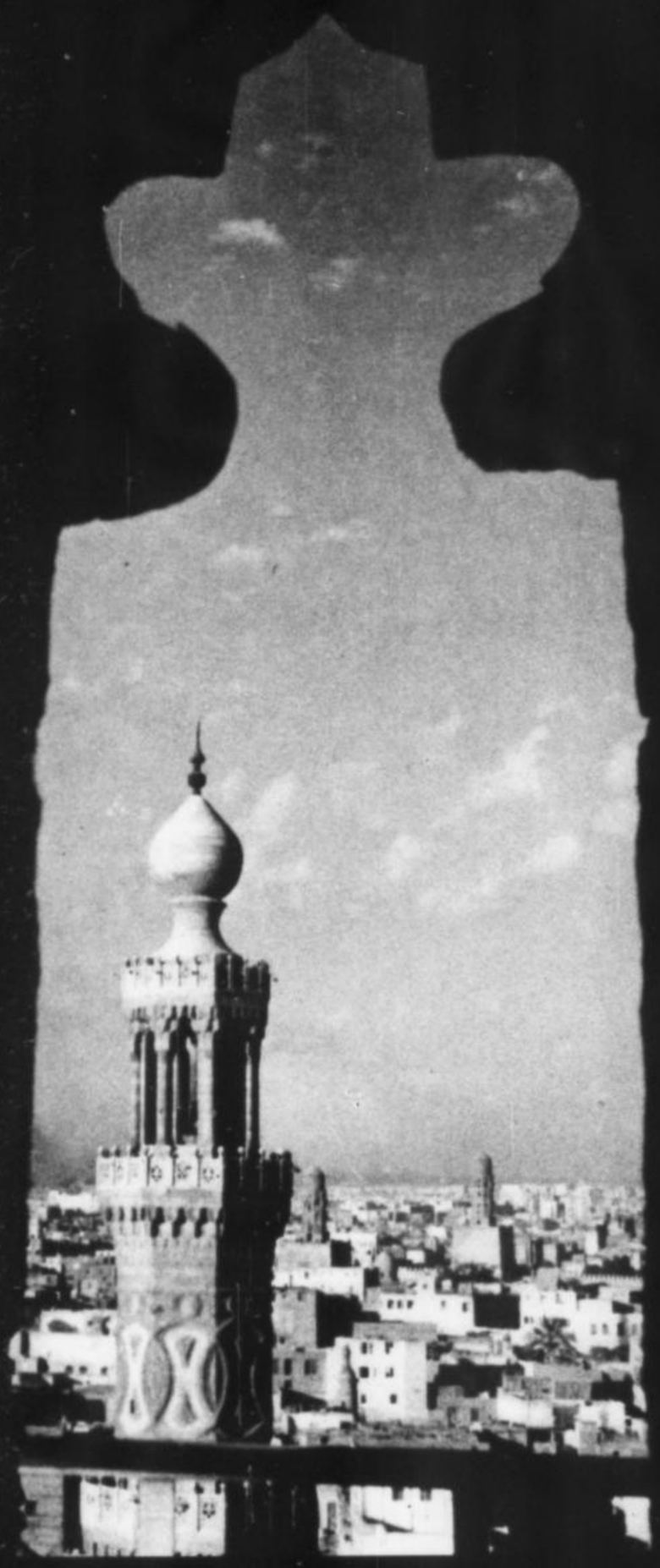


Photo © Abdel Fattah Eid, Cairo

CAIRO

1,000 years of history inscribed in stone

Since the Pharaoh Menes conquered the Nile Delta 5,000 years ago, thus re-uniting north and south, Egypt has remained Egypt. And Cairo is the heart of Egypt. In Arabic, the word for Egypt is Misr, and for many centuries Misr has remained the popular name used for the Egyptian capital. Thus country and capital rightly share a common name, for in this great city one can see a synthesis of all of Egypt's past.

— Sarwat Okasha
Minister of Culture
United Arab Republic

by Abdel-Rahman Zaky

STRUNG like pearls on the thread of Islamic history, the names of the great cities of Islaın evoke a vision of magical splendour—Cordova, Cairo, Damascus, Aleppo, Baghdad, Bokhara, Samarkand. The list is endless, yet among these cities none stands so pre-eminent as Cairo.

As the capital of Egypt it is as old as Islam itself, and down to the present day it has consistently remained, not merely a bastion of Islam but a treasure house enclosing innumerable masterpieces of Islamic art that cover more than a thousand years.

Its history began when Amr ibn al-As conquered Egypt for Omar, the second of the Mohammedan caliphs, in the year 641 A. D. Amr captured the Roman fortress of Egyptian Babylon which stood at the settlement said to have been founded by emigrants from the ancient town of the same name. Just to the north of this fortress, whose

ABDEL-RAHMAN ZAKY, *of the U.A.R., is a leading authority on Islamic history and archaeology, and on medieval Cairo. He has written many studies in these fields and is the author of "The Citadel of Salah El-Din", "Cairo: From Gawhar to Jabarti" and "Concise Encyclopaedia of Cairo" (in Arabic). Dr. Zaky is lecturer in museography at the Institute of Islamic Archaeology, Cairo, and adviser to the "Committee on Civilization" at the Arabic Language Academy. He is editor of the "Concise Arabic Encyclopaedia, 1960-1968".*

Photo © Paul Almasy, Paris

remains still dignify Old Cairo, Amr set up his camp and here he founded the town named Al-Fustat (signifying "the tent").

Later rulers were to add other administrative centres to Fustat—and always to the north—but this was essentially the beginning of Cairo, the capital standing on the east bank of the Nile and replacing ancient Memphis to the west. In the 9th century, for example, Ahmed ibn Tulun, whose great mosque still stands, built Al-Qatai as his capital, north-east of Fustat.

The name Cairo, however, and the beginning of its great splendour date from the Fatimids, a Shiite dynasty claiming descent from Fatima, the daughter of the prophet Muhammad. The first caliph of the Fatimid dynasty in North Africa was Ubaydallah the Mahdi whose reign began in Kairouan, Tunisia, in 910.

Egypt was conquered half a century later, in 969, by Jawhar, vizier and commander in chief of the reigning Fatimid caliph, al-Muizz. The capital of the Fatimid empire was at once established in the new centre that Jawhar had founded and named Al-Qahira (The Victorious), a name which has passed into English as Cairo.

Jawhar had left Kairouan in February 969 with 100,000 men and ample supplies and equipment. By July 9, Fustat had surrendered and the Fatimid army was encamped on the sandy plain to the north of it. That same night a new palace-fortress city was marked out over a square roughly 1,200 yards each way. The south faced Fustat, the west ran beside the ancient canal known as Al-Khalij, the east fronted on the Muqattam Hills, while to the north lay open country and the highway to Asia.

The original wall and the seven gates were of mudbrick. The three magnificent stone gateways and the section of the wall that survive today were part of a grand rebuilding in

CONTINUED NEXT PAGE

stone on a slightly different alignment a century later by the great vizier Badr al-Jamali.

The walled Al-Qahira was a royal city, entry to which was forbidden except to those on official business. It was designed to enclose two palaces for the caliph and his family, government offices, quarters for the garrison, the treasury, arsenal, stables and other buildings.

Once the walls were begun, Jawhar's next task was the foundation of a great assembly mosque. On Sunday, April 3, 970, was founded Al-Azhar (the Resplendent), the mosque that is still the glory of Islam. It was finished on June 24, 972, and in 988 it began to be used by scholars and students. It then became what it has ever since remained, one of the chief universities of Islam.

Then, as now, students from every part of the Muslim world gathered within its walls to receive instruction from the lips of great scholars in the Koran, in theology, the Traditions of the Prophet, law, grammar, logic and rhetoric. After the time of Saladin, Al-Azhar became the most eminent centre of orthodox teaching in Islam, a university of unequalled distinction and world-wide reputation.

Within only a few years of its foundation, Cairo had grown to such splendour that in 985, the Arab traveller Maqdisi, could write: "Baghdad was in former times an illustrious city, but it is now crumbling to decay, and its glory has departed. I found neither pleasure nor aught worthy of admiration there. Cairo today is what Baghdad was in its prime, and I know of no more illustrious city in Islam."

For Cairo was no longer a provincial city, the seat of a mere governor appointed by the Abbasid caliphate. It was the capital of a vigorous empire

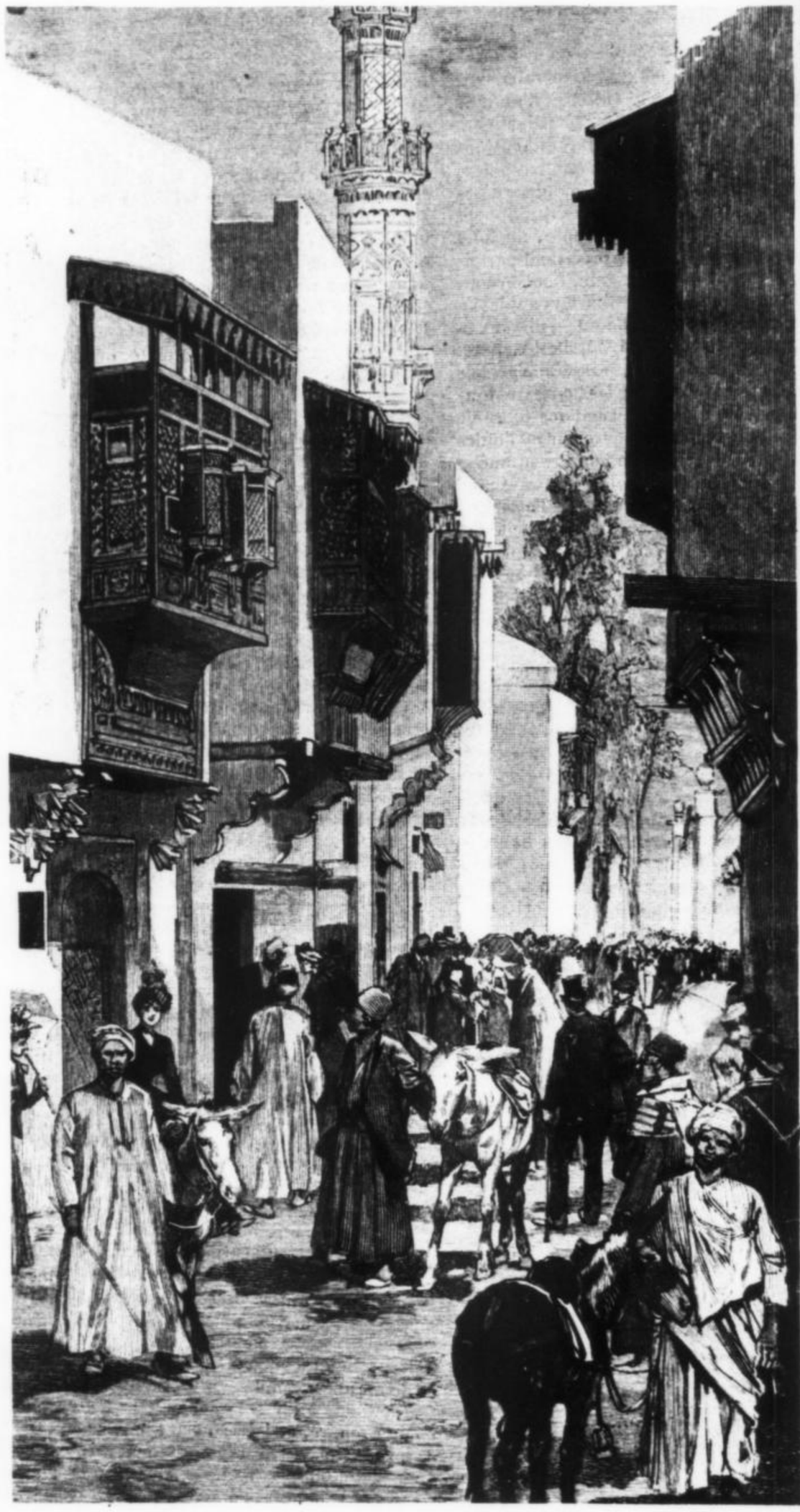
SULTAN PUBLICISTS OF THE 13th CENTURY

Under its Mameluke rulers, Egypt in the 13th century rapidly developed its contacts and trade with other countries. Benefiting from the fruitful transit trade between the Mediterranean ports and the East, Cairo became one of the world's richest cities.

Chronicles of the time tell us that Sultan Kalaun (1278-1290) instructed the governors at his ports to treat foreign travellers and merchants with the utmost consideration, and by cordiality and friendship to encourage them to extend their stay. Such visitors, he decreed, should be taxed with justice and impartiality and required to pay only the officially prescribed amount. "They," (the travellers and merchants) declared the order, "are gifts to us from the sea to invigorate the life of our ports. Whatever they say of us will be remembered by others. Our good actions towards them (falling like seed on fertile soil) will bear fruit which will be borne far and wide as their ships, with sails spread like the wings of a bird, carry them to other lands."

Sultan Kalaun did much to promote Egyptian trade, and for this purpose he issued passports enabling merchants to travel safely through Egypt and Syria as far as India.

Other Egyptian sultans actually launched publicity campaigns, despatching messages to traders in East and West to encourage them to visit Egypt. The cordial terms and subtle phrasing of these messages clearly shows the importance accorded by Egypt to its contacts with other countries. One text runs: "Let he who has chosen to visit our kingdoms look on his decision as that of a man to whom God wills nothing but good. Let him come to a country where no man need possess worldly goods, for the visitor will find here a veritable Garden of Eden, filled with distractions for he who is far from his native land. Let the merchants of the Yemen, of India, of China, of Sind and other kingdoms who have taken note of our decree, make ready to journey to our country. They will see for themselves that our words have not done justice to reality and that the good fortune awaiting them greatly exceeds our promises."



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which more than rivalled that of the Abbasids. It had become a Mediterranean power, the equal of all its rivals to east and west.

The naval power and wide connexions of the Fatimids made Egypt a new factor in the power politics of the area. These and the wisdom of Fatimid policies led to Cairo's rise as a centre of trade that flourished on a scale previously unknown.

Writers and travellers have devoted many pages to describing its splendours, climaxed by its two great palaces. Between them lay a square, Bayn al-Qasrayn (Between the Two Palaces), a name which still survives as that of a street flanked by several fine mosques of later date.

The square was used for parades and great ceremonies. To the east lay Al-Muizz's palace, to the west that built by his son Al-Aziz to overlook the Garden of Kafur (an earlier ruler) that now lay between it and the Khalij canal.

The Egyptian topographer Maqrizi (d. 1441) devotes nearly two hundred pages to a description of the palaces with their four thousand chambers, including the Golden Hall, a gorgeous pavilion in which sat the Caliph on his golden throne surrounded by richly attired attendants, the Emerald Hall with its pillars of marble and the Great Diwan where he sat in state on Mondays and Thursdays at a window beneath a cupola.

Al-Qahira of the Fatimids was indeed a new city. The Fatimids could have echoed the words of the Emperor Augustus, when he spoke of Rome, and boasted that they found their city mudbrick and left it stone. Construction in stone was an innovation at that time, its use having been abandoned since the classical era.

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Left, drawing of a Cairo street in 1889. Right, street scene today in a market area of the city. Though Cairo today boasts many skyscrapers and modern buildings, little has changed in the appearance of the old quarters with their narrow twisting streets, where crowds throng the stalls and open-front shops. Cairo became a great cosmopolitan and trading centre in the time of the Mamelukes (13th-15th centuries A.D.) when it was the richest and most populous city of Islam. Goods and commodities from many lands were on sale in its markets. Even today, the aromatic odours of the bazaar quarter recall those far-off times when Cairo grew rich on the trade in strange spices brought from Arabia Felix and India.

Photos © Paul Almasy, Paris

Photo © René Burri - Magnum

CAIRO *(Continued)*

Golden age of Muslim architecture

As mentioned previously, Badr al-Jamali rebuilt part of the walls and gateways (1087-1091). They are monuments of magnificent stonework. His own tomb-mosque on the Muqattam is of stone, as was the mosque of Al-Akmar (1125). The minaret of Badr's mosque was also an innovation for Islamic architecture in Egypt.

The next major change in the plan of Cairo came with Salah-ad-Din al-Ayyubi (Saladin), who took over from the Fatimids in 1169 and ruled till 1193. He planned a new wall to join Al-Qahira and Fustat into one great city, thus enclosing an area ten times as great as the Fatimid capital.

Saladin also built what is still the dominant architectural feature of Cairo, the Citadel. It stands on the foothills of the Muqattam, and it was to the Citadel that the centre of government was now transferred. The centre of gravity had moved from the Fatimid city. The old palaces fell into ruin and new buildings arose on their sites. Only a few fragments of their carved woodwork have survived.

Saladin and his successors, who ruled until 1250, brought further changes to Islamic architecture in Egypt. The college-mosque (madrasa) made its appearance, and with it a cruciform plan in both mosque and madrasa. The pepper-pot minaret and the use of stalactite ornament came into use, as did the lavish use of squinch arches and the external ornamentation of the dome.

Under Mameluke rule, which was uninterrupted up to the Ottoman conquest in 1517, commercial prosperity led to further expansion of Cairo, south, west and north. Beyond the northern gates of Al-Qahira there grew up a new suburb. Much survives from Mameluke times—tomb-mosques, college-mosques, schools, inns, public fountains.

Indeed much of the unique beauty of Cairo's architecture is due to the Mamelukes. But of their luxurious palaces we have nothing except some huge walls from Bishtak's palace, a fine gateway from the Yeshbek's mansion next to Sultan Hasan's imposing mosque and the better preserved mansion of the Emir (known as Beyt-el-Cadi). Their sumptuous beauty is something that we can but dimly imagine from the descriptions of travellers and the rare and delicate objects that adorn our museums.

We can still see traces of the exquisite mushrabiyah latticework that embellished the Mameluke palaces. Even today, some markets are shaded by matting or wooden roofs much as they were in those far off times. But the luxurious palaces and mansions, the public baths and gar-

XUM

Photo © Abdel Fattah Eid, Cairo

Cairo's oldest mosque, with its spiral minaret, brick pillars and stylized arabesques, has remained virtually untouched since it was built by Ahmed ibn Tulun in 879 A.D. (photo left). In the backround looms the imposing mass of The Citadel, the fortress built by Saladin in the 12th century. Saladin did not live to see its construction finished and the work was completed by his brother the Sultan El-Adel. The Citadel was supplied with water from "Joseph's Well," dug out of solid rock to the level of the Nile. Dominating The Citadel are the domes and minarets of the famous Mohammad Ali mosque, the largest and most splendid that remains from the Ottoman era. Photo far left, a view of the inner courtyard of the Ibn Tulun mosque as seen from the minaret.

dens, the pleasure kiosks and belvederes, the streets and inns that were the meeting-places of the world, live on only in the pages of the historian Maqrizi.

Under the Mamelukes, Cairo was for two and a half centuries the richest, the fairest and the most populous city of Islam. Its mosques and other buildings testify to the taste and public spirit of its rulers. The variety and subtlety of the architecture is extraordinary.

The 13th, 14th and 15th centuries all have their characteristic masterpieces. From Kalaun, whose period saw the end of the Crusaders, to Qait-Bay and Al-Ghuri, who saw the Ottoman menace about to overwhelm Egypt at the same time that the Portuguese were cutting the vital trade-routes to India and the Far East, one lovely building succeeded another. The façades, the minarets and the interiors grew in delicacy and imaginative enterprise.

One particular masterpiece is outstanding because it is quite unlike any other—the college-mosque of Sultan Hasan which was built 1356-1359. Its stones were taken from the Pyramids, and it is perhaps not too fanciful to suppose that something of its uniquely massive and monumental character is due to that inspiration. Its walls rise to a great height and are crowned by a magnificent cornice as splendid in conception as Michelangelo's on the Palazzo Farnese in Rome.

Everywhere the impression is made by size if not by detail. The soaring portal rises the whole height of the building. The interior court is surrounded by four noble arches. The whole was once adorned with the finest of craftsmanship in bronze and enamelled glass, some of which can be seen in the Museum of Islamic Art, while its bronze-plated door now beautifies the Muayyad mosque beside the Bab Zuwayla gate.

Arab travellers and writers vied with each other in their accounts of this gracious city. Ibn Battuta, the Marco Polo of Islam, described it in the most glowing terms in 1326. In 1383, Ibn Khaldun the historian, who ended his days in Cairo, called it "the metropolis of the universe, garden of the world, throne of royalty, a city adorned with palaces and mansions, convents, monasteries and colleges, and illuminated by the stars of erudition in a paradise so bounteously watered by the Nile that the earth seems here to offer its fruits to men as gifts and salutations."

During this whole period Cairo was the heart of Islam and of Islamic civilization. Baghdad was captured and sacked by the Mongols in 1258 and never recovered its former splendour. Cairo welcomed its refugees. Only

CONTINUED NEXT PAGE

Mameluke Egypt in the whole Middle East was able to resist the onslaught of the Mongols. Three times they were driven back and defeated. Egypt's prosperity, indeed, was only the greater because of them. It was the greater, too, because much of its trade passed on to the steadily growing markets of Europe.

The craftsmen of Cairo reached new levels of perfection during this period, and much of their metal, wood and glass work has survived in the mosques themselves and in Cairo's museums. Moreover, the skyline of the city is a symphony of domes and minarets in which architects and craftsmen joined in creating one of the most beautiful cities man has made.

Joseph Gobineau, the 19th century French traveller, wrote: "In Cairo the memory of the Mamelukes dominates everything, so much did they do, so many solid and beautiful monuments did they create. Only they could carve in stone the world of arabesques which adorns with such splendour the buildings of all Asia. Though slaves only yesterday, the Mamelukes, once they laid their sabres down and possessed the authority to rule, seemed no longer capable of anything trivial. Everything that they built is without equal among Muslim architecture in the rest of the world."

With the Ottoman conquest in 1517 a gradual decay set in. Trade with the East steadily diminished. Nevertheless, these centuries are not entirely without importance in the adornment of Cairo. Neither taste nor skill were what they had once been. Yet, in the years up to the beginning of the 19th century, many buildings were added to Cairo that are still a delight to behold.

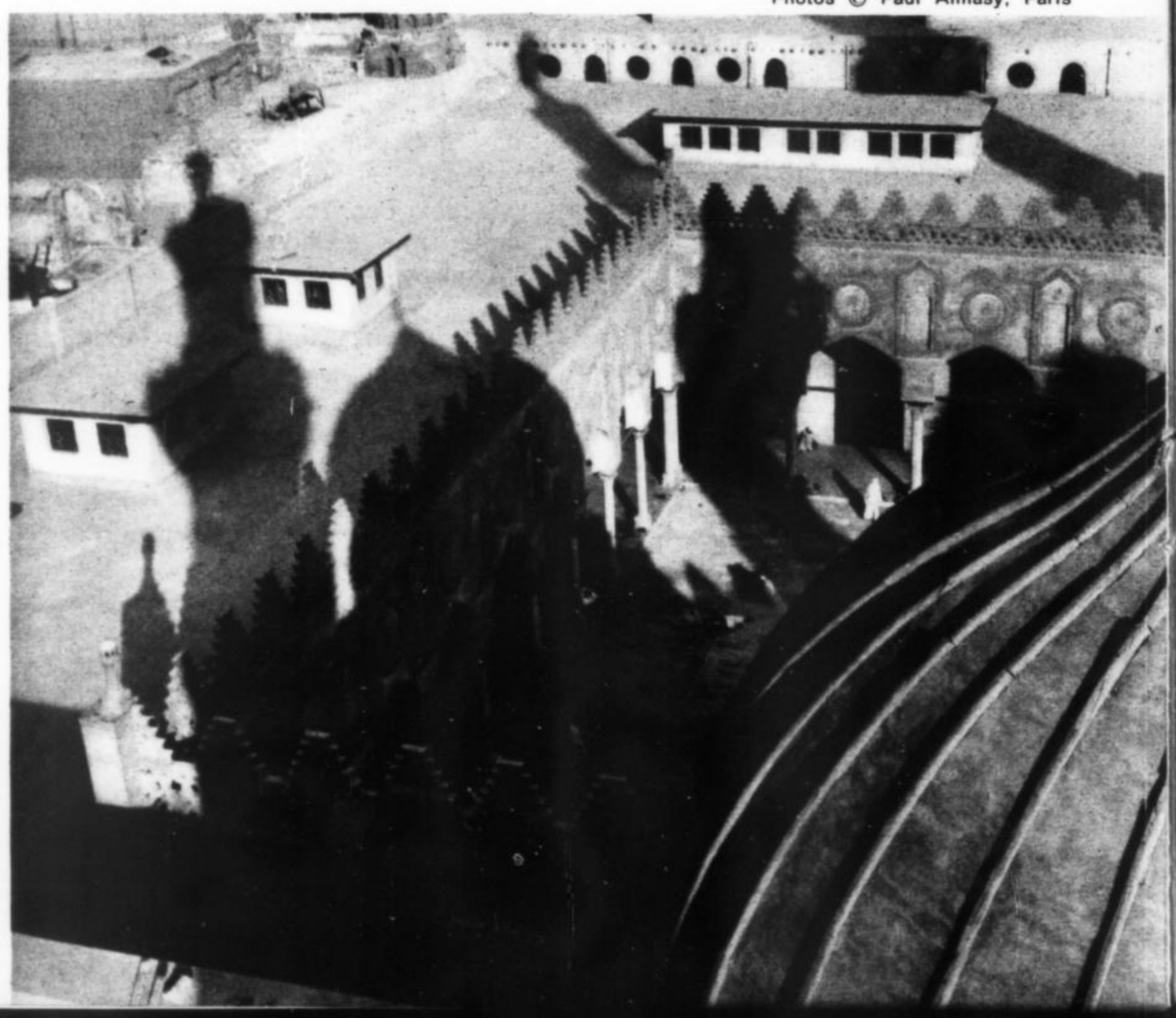
In 1798, with the appearance of Napoleon, the power politics and new techniques of Europe exploded upon Egypt. Willy-nilly Egypt was dragged into the modern world. The changes have been as tremendous as they have been rapid.

Walking along the Nile or through the streets of the modern city with its skyscrapers and broad avenues, the visitor may not always be aware how old a city Cairo really is until, looking to the west, he sees the ancient pyramids, or to the east the proud citadel of Saladin.

But in the streets of the older city the past is never absent. Cairo, like so many other places in the Nile Valley, is like a book whose pages are of stone inscribed with clear records of man's endless endeavour. Each of them invites the passerby to wonder and to seek to learn the nature of his fellow men in other times and places. In few cities will such an effort be more rewarding than it is in Cairo. ■

Left, back home from a pilgrimage to Mecca, a Cairo citizen, in this 19th century drawing, recounts in pictures drawn on his wall the journey he made to the chief holy city of Islam. Below and right, two views of the Al-Azhar University.

Photos © Paul Almasy, Paris



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AL-AZHAR THE RESPLENDENT

Less than one year after the birth of the city of Cairo in 969 A.D., the new Fatimid rulers of Egypt laid the foundations of the great mosque of Al-Azhar (The Resplendent)—the first of many architectural masterpieces to be erected by this dynasty.

At the outset, the mosque was intended to be a centre for the teaching of the Fatimids' religious ideas. But within a few years, in 988, the Caliph Al-Aziz gave orders that tuition should be provided for 35 students for whom accomodation was also made available at his expense. The Fatimid caliphs spared no effort in the spreading of knowledge and the encouragement of learning. Successive rulers, ministers and wealthy citizens contributed funds with the result that the mosque became an Islamic university—the oldest in the world—whose splendour and influence grew rapidly. As Egypt became the leading country of the Muslim world, Cairo became a Mecca for scholars from far and wide.

Since that time, Al-Azhar has been a centre of Islamic culture to which theologians, scholars and teachers have come to lecture in theology, Arabic linguistics, logic, literature, mathematics, medicine, astronomy, law and other fields of learning.

Al-Azhar's renown as a centre for scientific studies spread throughout the world during the reign of the Mameluke dynasty (13th-16th century A.D.). Even when this period ended and invasion and occupation dimmed the brillance of cultural life in Cairo, Al-Azhar remained a refuge of religious doctrines and teaching and a bastion of the Arabic language.

At the start of the 20th century, Sheikh Muhammad Abdou, one of the founders of the modern intellectual movement in Egypt, introduced changes in the programmes and teaching at Al-Azhar which, while respecting the university's age-old traditions, also met the new demands of science and modern education.

More recent transformations have consolidated the vigour and increased the influence of Al-Azhar. In addition to its institutes for traditional Islamic and Arabic studies, it now has faculties in every discipline of the natural and social sciences, in agriculture, medicine, commerce, engineering and languages, as well as a teacher training institute.

Al-Azhar also has a women's college, founded in 1962, and today attended by 2,000 students from many parts of the world. The college is the nucleus of a future women's university, in which the existing college departments of medicine, the basic sciences, Islamic and Arabic studies, the social sciences, languages and commerce, including accounting, business administration and statistics, will become faculties.

In recent years, enrolment at Al-Azhar has grown rapidly and today tops 20,000. To meet this rapid influx, a vast university complex has been built on the outskirts of Cairo, comprising new faculty buildings and a university city to house students and staff. But the three oldest colleges—those for Islamic studies—are to remain near the 1,000 year old mosque which gave them birth.

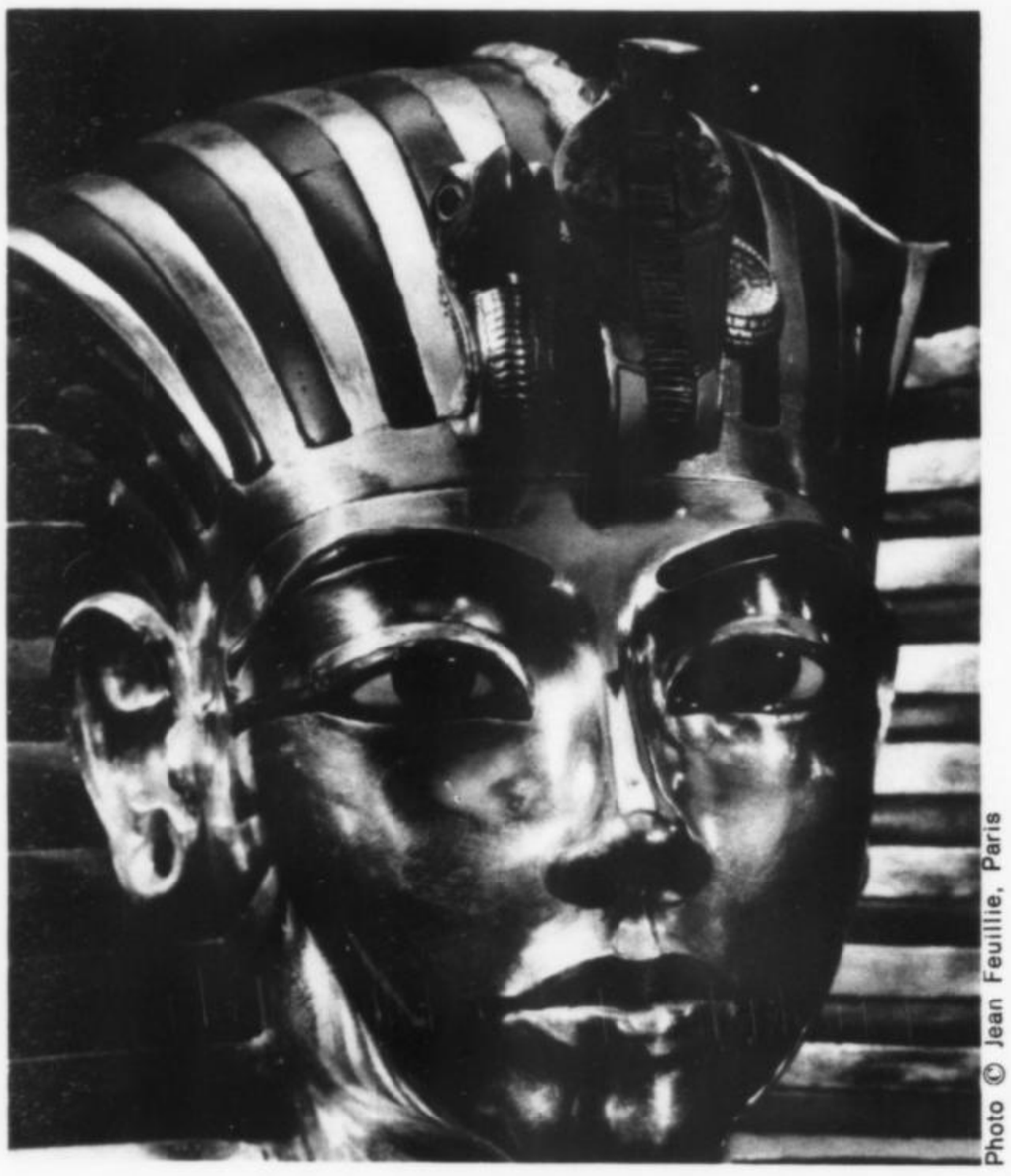

Photo © Jean Feuillie, Paris

THE FABULOUS TREASURES OF CAIRO'S MUSEUMS

The accumulated riches of thousands of years of history are stored within the walls of Cairo's remarkable museums. No less than 150,000 items are displayed in the Museum of Egyptian Antiquities which contains the world's finest collection of pieces from the time of the pharaohs. Hundreds of thousands of other items are stored in its repositories. Items taken from the tomb of Tutankhamen alone total 1,700 rare pieces, including the famous gold funeral mask, above. The rooms devoted to the Early Empire (2900 to 2300 B.C.), the high water mark of Egyptian civilization, contain countless statues including one of Mykerinos who built the Gizeh pyramid. The Middle Empire (2100 to 1750 B.C.) saw a new flowering of sculpture of which this bearer of votive offerings (right) is a fine example. The religious revolution during the reign of king Akhenaton (1370 to 1352 B.C.) had a strong influence on sculpture. The Museum possesses 71 limestone statues from this period as well as a quartzite head of Queen Nefertiti which is one of the masterpieces of ancient art. The Egyptian Museum is no doubt the world's richest repository for the study of the evolution of human civilization in Egypt from 6000 B.C. to the Roman conquest in 332 B.C. The Coptic Museum contains statues, architectural fragments, drawings and tapestries dating from the 5th and 6th centuries A.D. as well as a number of 16th and 17th century icons. The striking painting executed on wood (opposite page) was discovered in the Fayum region where, from the 1st to the 4th century A.D., Greek artists developed a style which foreshadowed the rise of Byzantine art. Some 70,000 examples of Islamic art—such is the impressive number of works in the collection of Cairo's Museum of Islamic Art. It contains ancient Arabic, Omayyad, Fatimid, Mameluke, Iranian and Turkish works; pottery, including some pieces 8 centuries old, glassware, gem-studded weapons, carpets and earthenware. The most complete collection of works of art from the Ottoman era is assembled in the Kasr-al-Nil Museum, while works of great European artists—Goya, Delacroix, Rubens, Van Gogh, etc.— and of Egyptian painters such as Mahmoud Said and Mohammad Negui, are displayed in the Moukhtar Museum.

Photo Ministry of Culture, Cairo

Photo © Hassia, Paris

XUM

SAN AGUSTIN

Archaeological mystery of prehistoric Colombia

by Fernando Sanz

A vast complex of megalithic monuments, stone sarcophagi and nearly 400 statues, some over 4 metres high, mark the birthplace in Colombia of a prehistoric culture which remained virtually unknown until the beginning of this century.

The "San Agustín culture", as it is called, takes its name from a nearby village that nestles on the eastern flanks of the central Andean Cordillera, 1,700 metres (5,600 ft.) above sea level, in a countryside of rolling hills interspersed with higher peaks and forest ranges. It is here that the great Magdalena river rises, the region being watered also by the Mulales, Quinchana, Bordones and other rivers.

In the immediate neighbourhood of San Agustín and farther afield, scattered over hills and valleys, are temples, mounds, tombs, statues and other remains, the remarkable heritage in stone of a civilization older than that of the Peruvian Inca civilization which lasted from 1200 A.D. until the Spanish conquest in 1532.

Even today, after years of research, many questions concerning the origins, chronology and relationships of the San Agustín culture with other civilizations are largely a matter of conjecture. Extending over several hundred square kilometres, the San Agustín area is today a national "Archaeological Park" in which many ancient ruins are probably still buried or overgrown with forest vegetation.

Although the Spanish Conquistadores explored and occupied the region in the mid-16th century, no mention of the remains is made in the chronicles of historians of the time such as Fray Pedro Simón, Pedro Cieza de León, or Don Juan de Castellanos.

The first description of the artistic

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Photos © Michel Hêtier, Paris

Like some strange creatures sheltering from the elements under a canopy of stone and branches, the statues, left and above, are two of a whole group that has recently been found in the thick jungles and mountains of the Andean Cordillera in southern Colombia. This "San Agustin culture", as it is now called, took shape 2,500 years ago and flourished for 15 centuries. The stylized form and gigantic size of the statues bear a certain resemblance to those of the Aztecs and Zapotecs in ancient Mexico.

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Many statues in the San Agustin region of Colombia have a second figure perched on their shoulders. The meaning of this is not known, but certainly must have been some form of religious symbolism. The strange double figure, left, measures nearly 2 metres (over 6 ft) in height.

A stone streamer, terminating in an animal's head, emerges from the mouth of this fanged deity, below, who stands just under I metre (3 ft) high. The significance of this curious streamer, which recurs in a number of San Agustin statues, is not known.

Photos © Michel Hétier, Paris

The manuscript on the island of

treasures of the area appeared in the chronicles of the Spanish friar Juan de Santa Gertrudis, who visited the region in 1757. He recounts his meeting with a Catholic priest from the city of Popayán who was eagerly excavating the tombs and mounds in search of hidden treasure. It was probably due to this man and other treasure hunters that most of the monuments now known were unearthed. Unfortunately, Fray Juan de Santa Gertrudis' manuscript lay neglected in the friary of Palma de Mallorca for 200 years and was not published until 1956.

Some forty years after Friar Juan, in 1797, the Colombian scholar Francisco José de Caldas visited the site and published a short description of it in a treatise on the geography of this region.

Colombian, French, English, Italian and German travellers who visited San Agustín during the 19th century mention its mysterious and spectacular stone monuments in their reports. However, the full importance and richness of its culture was not revealed to the world until the German archaeologist Konrad Theodor Preuss, who worked in the area from 1913 to 1914, published an account of his discoveries in his book "Prehistoric Monumental Art".

In 1935, the Colombian Ministry of Education acquired a large tract of land and established the "Archaeological Park", thus bringing the principal ruins under government protection.

In 1936-1937, the Colombian archaeologist, José Pérez de Barradas, carried out the first official excavations for his country and, in 1943, produced the most detailed study of the site published thus far. Another Colombian expert, Luis Duque Gómez, has since conducted further excavations and research.

Some thirty major archaeological sites have been discovered in the general area of San Agustín. Some have rather extraordinary names: Alto de Lavapatas (footbath mountain), Alto de Lavaderas (washerwoman mountain), Las Mesitas (the small plateaux), Alto de Los Idolos (mountain of the idols).

The San Agustín civilization probably extended over a period of more than 1,500 years and is described by Pérez de Barradas as a "northern Andean megalithic culture".

forgotten Majorca

On the evidence of excavations and the results of radiocarbon dating tests, Luis Duque Gómez has suggested a sequence of three periods: the first, lasting roughly from 555 B.C. to 425 A.D., is characterized by shaft graves with side chambers, wooden coffins, wooden sculpture, early gold-work, pottery bowls and vessels with painted and incised decoration, bark cloth, maize and root agriculture.

According to Duque, the middle period lasted from 425 to 1180 A.D. and is characterized by burial urns and mounds, monolithic sarcophagi, cremation and statuary. Metallurgical techniques such as hollow casting in the cire perdue technique and wire-work are added.

The third and last period, lasting from the 12th century to an unknown later date, is distinguished by its realistic stone sculpture, circular houses and loom weaving.

Some authorities believe that the San Agustín civilization in the northern Andes is related to the Chavin civilization in Peru and even to that of Tiahuanaco further south in Bolivia.

It is possible, and some authorities believe, even probable, that Central America, including Mexico, played a role in the development of the civilizations of the Andes. In recent years evidence has been accumulating that the roots of the Chavin culture of Peru are derived from a Mesoamerican source located in the Olmec country (the area now covered by the Mexican states of Veracruz, Tabasco and Oaxaca).

Ancient navigators from Central America coasting along the northern shores of South America apparently introduced into Peru the jaguar cult and many elements of the associated art style, along with maize farming. These contacts probably date from the 9th century B.C., and it seems likely that the idea of the jaguar cult also spread into what is now Colombia, thus reaching San Agustín about 500 B.C. But this cultural influx was not a one-way process from Central America southwards, it was also a northward movement from Peruvian cultures into Colombia.

The basic characteristics of the San Agustín culture can be classified into three categories. According to the archeologist Konrad Preuss they are: (1) its massive stone monuments,

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Photos © Michel Hétier, Paris

Above, this massive statue, measuring over 2 metres (over 6 ft) high and 1½ metres (almost 5 ft) wide, portrays a sun god holding a sceptre in each hand. It belongs to the so-called classical period of the Colombian culture of San Agustin, which lasted from the 4th to the 12th century A.D. The diadem with its geometric designs bears some similarity to those found in the frescoes of Chanchan in Peru. This appears to indicate contact between the Chimu culture of Peru and the culture of San Agustin in Colombia. Right, an eagle devouring a serpent.

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Photos © Michel Hétier, Paris

SAN AGUSTIN *(Continued)*

innumerable statues, and stone coffins weighing tons, sometimes found in huge stone-built tombs; (2) the recurring forms of stone carving such as large mouths with long pointed fangs and statues with a second figure crouching on the head or back; (3) stone streamers emerging from the mouths of statues, the tip of each streamer terminating in a tiny head.

San Agustín's architectural monuments are its temples and tombs built of massive slabs of stone. Embedded vertically in the ground, the stone walls of the temples strangely recall the dolmens, or prehistoric standing stones, of Europe and elsewhere.

The outstanding art form of San Agustín culture is its monumental sculpture, principally its statues which display an extraordinary variety and wealth of detail. They range in height from 40 cm. to over 4 metres (15 in. to 13 ft.) and their forms and styles suggest that their development was spread over a long period of time.

According to Pérez de Barradas, religion and magic directly inspired the sculpture of San Agustín, although the treatment of certain images is extremely realistic. Like the Zapotecas figures in Mexico, "some of the San Agustín statues, for all their stylization and contorted forms, reflect a rare knowledge of anatomy."

But as in the case of the Aztec art of Mexico, the San Agustín artists worked according to a set of strict rules so that the disproportion of head and body and the often grotesque forms and attitudes of their statues are no accident. The effect is impressive,

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GODS AND MEN IN THE ARCHAEOLOGICAL PARK

The photos on these two pages show a representative sample of the different types of statues belonging to the San Agustin culture. They were photographed in a jungle area of southern Colombia which has now been set aside as an "archaeological park". Photo No. 2 shows a god apparently wearing a hat, which is most unusual. Photo No. 4 has been described as a flutist. Below, half-human, half-animal figure.

Photos © Michel Hétier, Paris

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particularly in the case of monumental statuary such as the famous triangular head nearly two and a half metres (8 ft.) high.

As a rule, the heads are disproportionately large, the body squat and thick-set, the limbs short and rigid. The most elaborately worked part is the face, which often shows a very large mouth with long pointed fangs. Half man, half feline, the statues are adorned with necklaces and bracelets; some hold maces or sceptres, others bear trophies or clubs.

Many have protruding tongues, a detail also found on statues in many Pacific island cultures, in China and south-east Asia and on Indian sculptures in north-eastern Canada.

The meaning of the religious symbolism of the San Agustín figures is still obscure since many important details are missing in the general picture of San Agustín culture. Awesome representations of anthropomorphic gods abound as well as lesser deities in the shapes of snakes, lizards, monkeys and eagles.

"The man of San Agustín," writes Pérez de Barradas, "was content to spend his life in a straw hut, but for his gods he built temples of massive stones which by titantic effort he cut and carried from his quarry. For his own use he made rudimentary implements of stone, which he never improved; but inspired by his adoration for the gods, he used these rough tools to carve, with infinite patience and devotion, the statues of his deities which today astound us by their immense size and consummate art." ■

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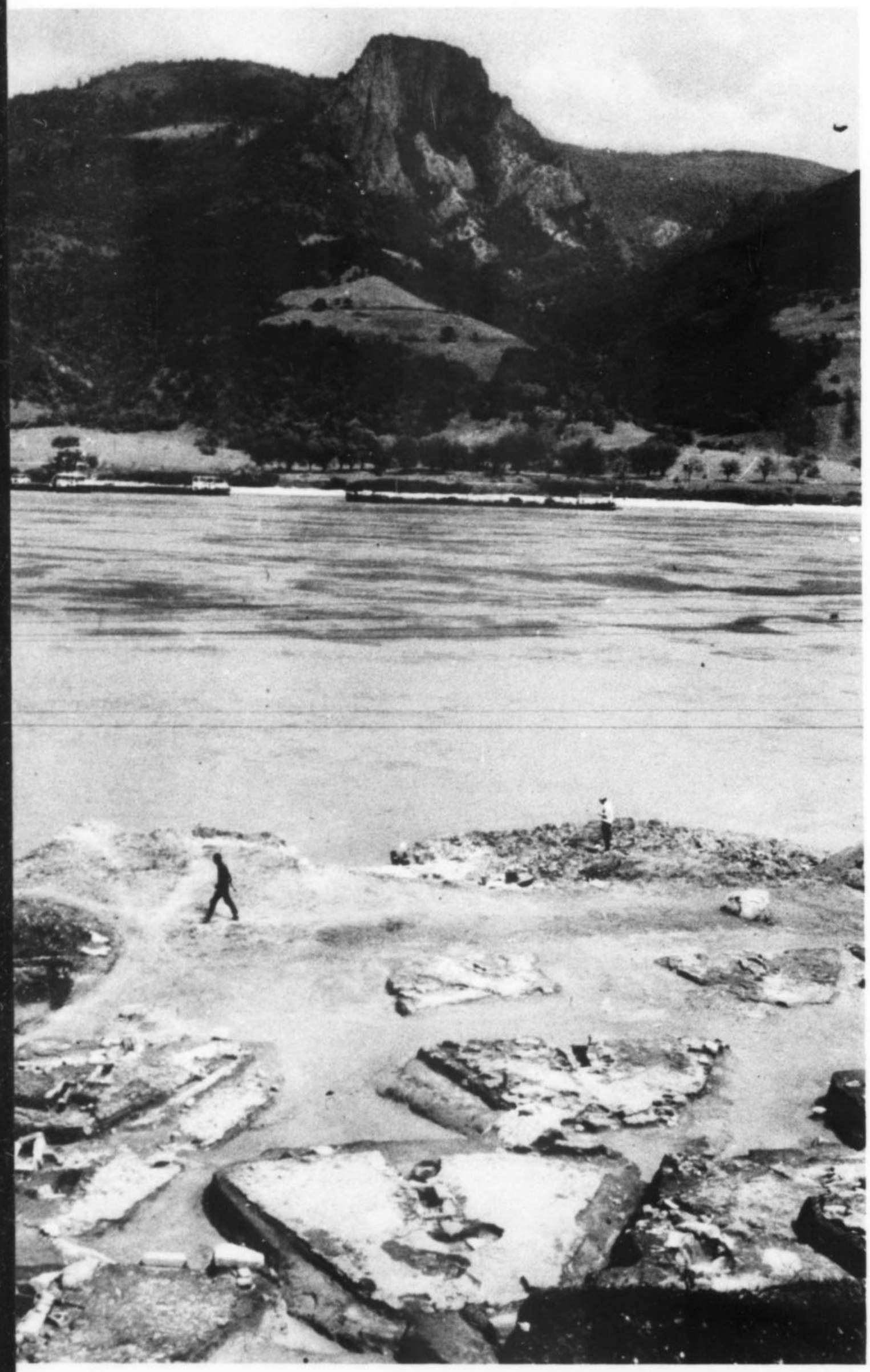
The remains of a prehistoric village dating back some 6,000 years B.C., alongside the River Danube on the Yugoslav-Romanian border. This is the oldest settlement found thus far in Europe. It was unearthed by Yugoslav archaeologists while excavating a site in an area due to be flooded by a new dam. Facing it across the river stands the Treskavac mountain, its curious trapezoid shape rising sheer and barren above the Romanian bank. The foundations of the dwellings (foreground) all have this same trapezoidal form, which has led archaeologists to believe that the inhabitants of the Lepenski Vir village were inspired in their architecture by the geometrical shape of the mountain.



by Jean Vidal

ONE of the intriguing European archaeological discoveries of recent times, which has raised more questions than it has answered, is that of an 8,000 year old settlement at Lepenski Vir ("the whirlpool of Lepena") on the Yugoslav bank of the Danube which forms the frontier with Romania about 175 miles east of Belgrade.

It came to light in the course of salvage archaeology in an area due to be flooded by a new dam. In spring 1964, representatives of the governments of Romania and Yugoslavia together laid the foundation stone of the Djerdap dam which the two countries were to build jointly in the scenic splendours of the Iron Gates, a mountain passage of the Danube where, until 1896, massive boulders had impeded the course of navigation. The banks of the Danube would, at this point, be engulfed by the waters of a vast reservoir lake.

Dragoslav Srejovic, a young lecturer at the Belgrade University Faculty of Philosophy, believed that this area might be the site of an ancient culture that could provide the link between mesolithic times and the later neolithic culture of Starcevo. Starcevo is the oldest neolithic culture of the Balkans dating back to 5000 B.C.

Immediate action was called for; it would be a race against the rising flood waters like that undertaken by archaeological teams during Unesco's campaign to save the Nubian monuments from the Nile, though of course on a much more limited scale.

A special committee, headed by Professor Lazar Trifunovic of the Belgrade National Museum, gave Dragoslav Srejovic the task of attempting to uncover the secrets hidden under the banks of the Danube.

In July 1965, after making a number of preliminary probes, Srejovic pitched his tent on the banks of the river by the turbulent rapids of Lepenski Vir. He knew that, throughout the ages, men had been dependent upon the Danube. Century after century they had cast their nets there

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JEAN VIDAL *is a French film producer and writer who contributes regularly to various popular science magazines. He has produced several TV documentary films on archaeological excavations.*

LEPENSKI VIR

Europe's oldest settlement on the banks of the Danube

achieving magnificent catches of fish trapped by the turbulence of the waters.

It was the turbulence of the river at this point that had first caught Srejovic's attention seven years earlier in 1958. Would not other men, even before the inhabitants of the Starcevo era, have throught of establishing themselves on this favoured site?

With a small team he began an investigation in depth below the Starcevo era layers which were spread over the district. One day their picks hit a solid reddish-coloured object and the archaeologist proceeded to clear the ground around it. The reddish colour persisted, marking out a trapezoidal shape. Could this be the foundations laid by men who had lived there long before their descendants of the Starcevo era?

Eleven trapeziums were soon uncovered and carbon 14 testing confirmed Srejovic's speculations. The culture of Lepenski Vir was found to go back to nearly 60 centuries before the Christian era—earlier than any other settlement unearthed thus far in Europe.

Lepenski Vir is situated in eastern Serbia on the Yugoslav-Romanian border in a tiny area, itself in the shape of a trapezium, 170 metres long by 50 metres wide (560 ft by 165 ft). Its total area, therefore, is no greater than that of a small hamlet. But, as we shall see, the importance of a discovery cannot always be judged from the size of the site on which it is made.

Protected by thick forests and rocky escarpments, the cluster of structures was built on a small, clear stretch of beach and, for a long time, the river remained the sole means of access. Considered in the context of its surroundings, Lepenski Vir is but an insignificant detail on the vast canvas of the Iron Gates, the extraordinary ravine that forms a little world on its own.

Facing the settlement, on the Romanian bank of the river, the Treskavac mountain rises sheer and barren to a height of 679 metres (2,230 ft). The entire mountain has a curious trapezoid shape and its outline stands out sharply against the sky.

It is curious to observe that both the shape of the tiny valley and the foundations of the dwellings unearthed all have this same trapezoidal form. This has led to the conjecture that the natural trapezoid shapes directly inspired the men of Lepenski Vir in their architecture and that its geometric shape became a symbol and pattern of special significance.

Four layers, totalling about ten feet in depth, have been unearthed thus far. This super-imposition of layers makes it possible to establish that Lepenski Vir was in constant development for a period of over 1,000 years, from 5800 to 4700 B.C. The topmost layer, which is also the most recent (dating from 4850 to 4700 B.C.)

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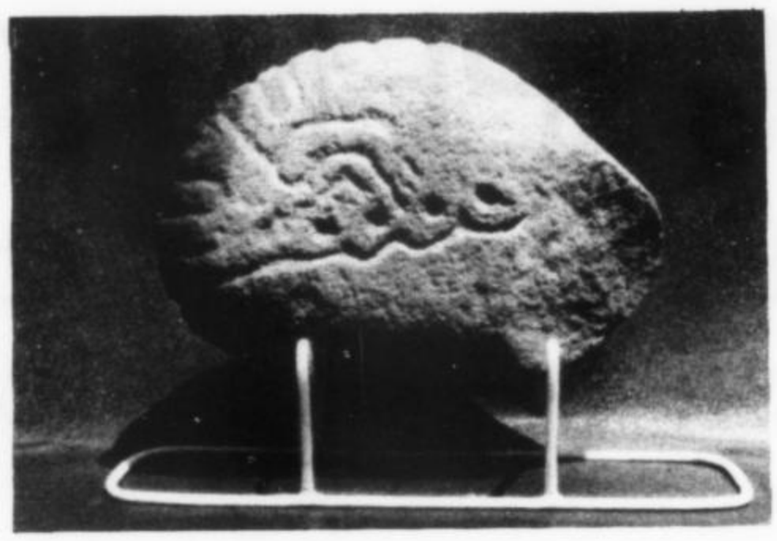
Photos © Jean Vidal, Paris

On this stretch of river bank Yugoslav excavation teams painstakingly dug out a three-yard thick deposit. The first remains they uncovered were those of a culture settlement, dating back to 5000 B.C. Beneath these lay the foundations of homes and numerous artefacts belonging to a still earlier culture. One of the most striking features of the Lepenski Vir excavations are the many art objects revealed (see following pages).

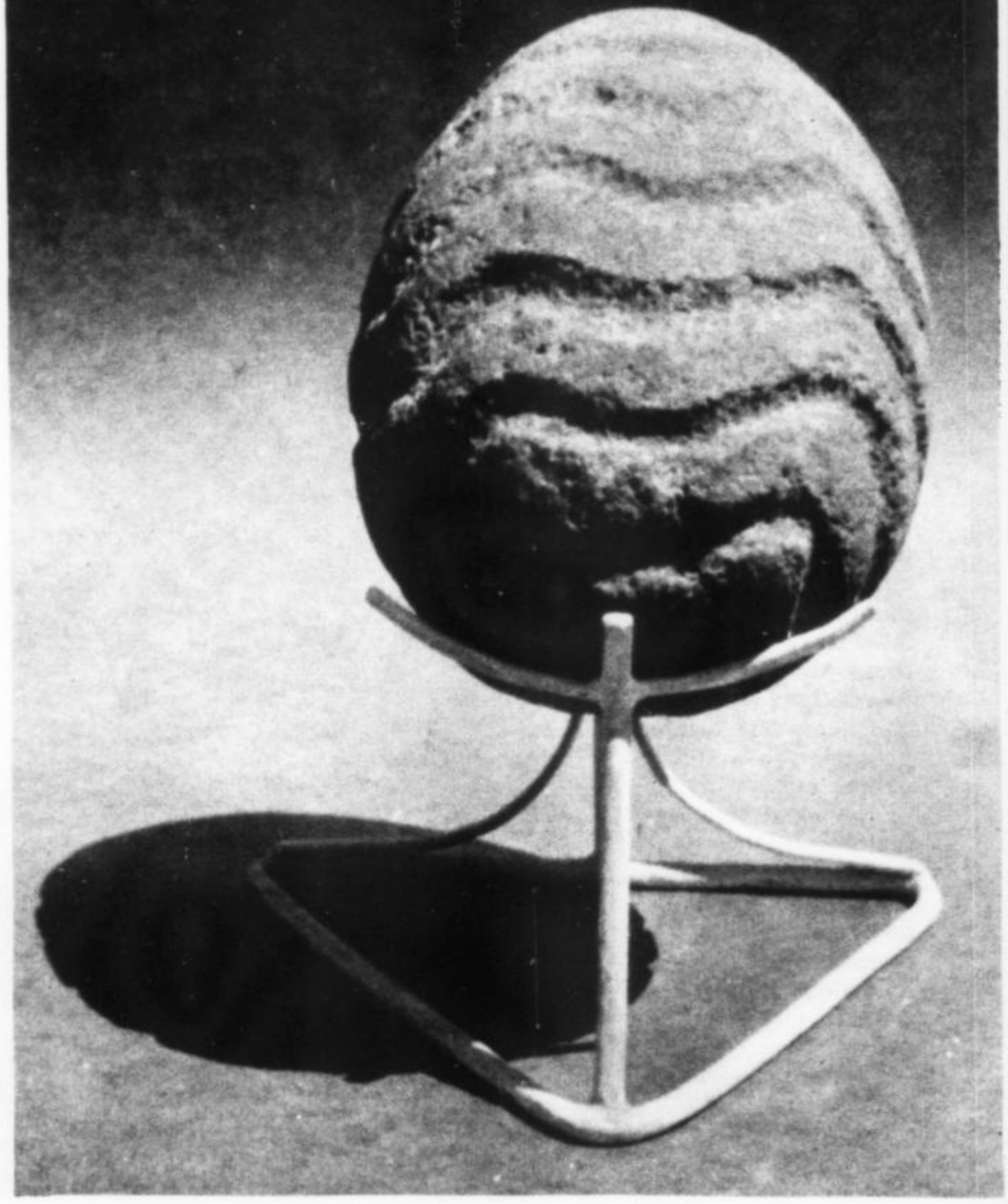
Photos © Jean Vidal, Paris



MAN FISH OR DOODLE?

The sculptors of Lepenski Vir respected the basic shape of their raw material—stones rounded and polished by the swirling waters of the Danube. The examples above and below right have been variously interpreted as representing fish, human heads or as being simply geometric doodles like those executed on bone by the hunters of post-glacial Europe a few millenia earlier.

The Lepenski Vir people have been referred to as a-ceramic or pre-ceramic and the few sherds of pottery found on the site (above) have been ascribed to the Starcevo era, previously the oldest known neolithic culture of the Balkans. However the oldest piece of pottery found at Lepenski Vir has been put at 5600 B.C., thus ante-dating the Starcevo culture. The incised decorations on a grey sandstone plaque (below) may represent hunting scenes.



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consists of a light soil of black ash and has two levels of dwellings, A and B, in which vestiges of the Starcevo culture are mingled with those of lower levels. In the humus of level B are to be found tombs of historic and prehistoric eras which suggest that the more recent generations continued to use them as their traditional burial places.

By their colour, structure and their remains, the deeper layers (dated 4950, 5600 to 5000, and 5800 B.C. respectively) are clearly distinguishable from the most recent layer. Lepenski Vir, therefore, offers evidence of two types of prehistoric cultures—the most recent overlapping with that of Starcevo and the older one being a new phenomenon, the unexpected revelation of European pre-history.

Like the traditional village, Lepenski Vir had its central square as a meeting place and streets whose pattern changed from era to era. The houses, about a hundred of which have been uncovered, were often built one on top of another in succeeding centuries, since the tiny site of the settlement severely restricted its habitable area.

The houses had a solid floor made of a chalk-based mortar of a reddish colour covered with a pink or white facing. The walls and roof consisted of skins stretched over supporting poles and an overhead beam. The dwellings were in the shape of a trapezium with the roof sloping sharply towards the shortest side and the entrance on the opposite and largest side. At the entrance to each house two threshold stones were placed in such a way as to direct the dwellers towards the side walls so that they would not, in the dark, stumble against the centrally sited hearth built of chalk blocks or clay.

Around the hearth was placed a sacrificial altar with sculptures and a large rounded stone half buried in the ground. This may have been a symbol of the sun for it was often embellished with a design reminiscent of the sun's rays.

Several hearths were surrounded by thin flagstones in the shape of isosceles triangles, the meaning of which is unknown. It has been suggested that they may symbolize the link between man and his dead ancestors. In several buildings were found tools, weapons, including clubs measuring 25 to 50 cm. (10 to 18 in.) in length, and ornaments (all these objects were made of bone or stone), as well as a few sherds of pottery dating back to 5000 to 5600 B.C.

The pottery has been assumed to be that of the Starcevo period, since the excavators have referred to the Lepenski Vir people as a-ceramic and pre-ceramic. The oldest dating of 5600 B.C., however, which antedates the Starcevo era, has posed a new puzzle for the archaeologist.

Another surprise was furnished by the curved support stones that held

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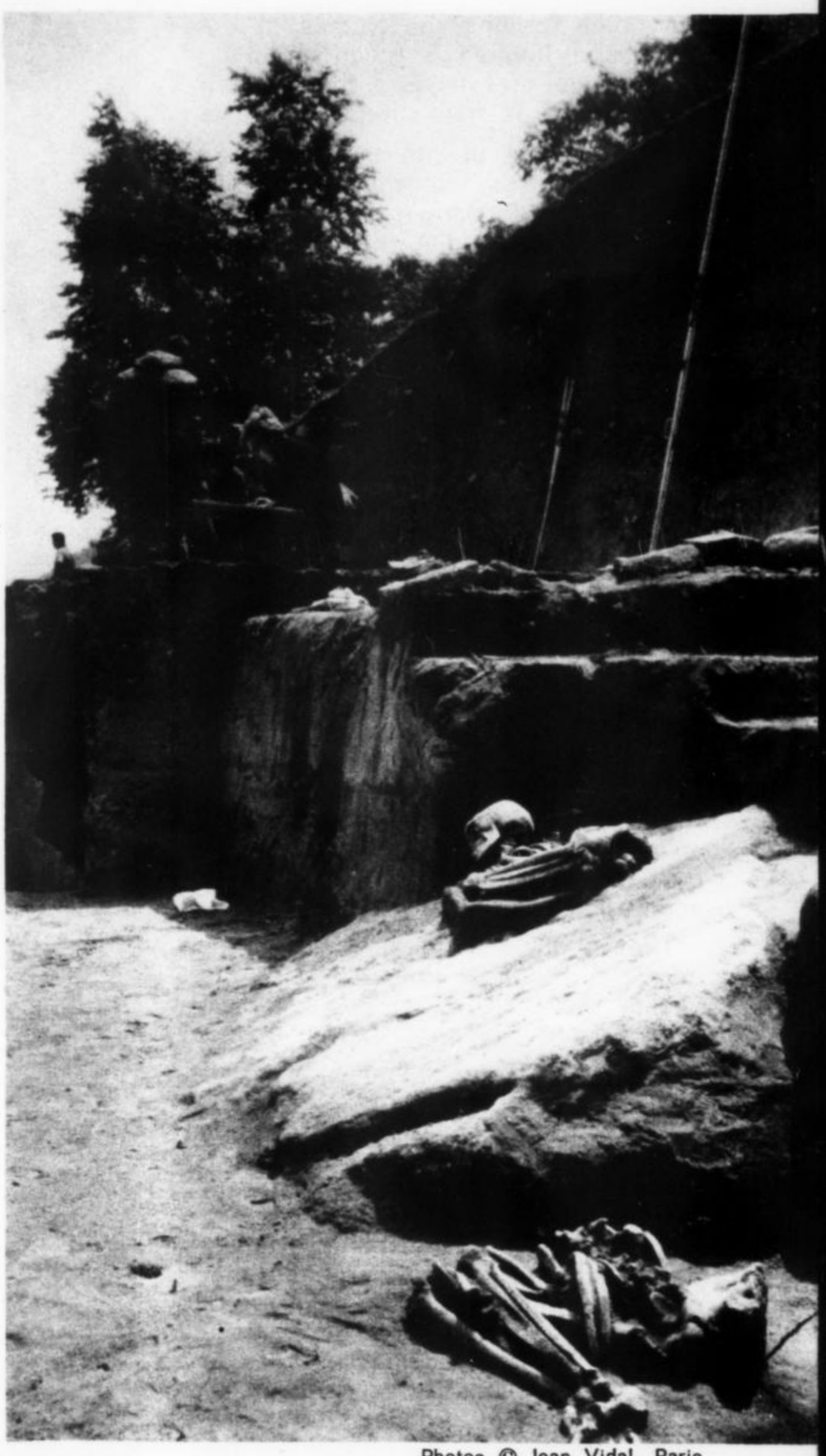


The people of Lepenski Vir buried their dead inside their houses. Skeletons (right) were found lying beside the hearth looking, in the words of the excavators, "as if they had fallen asleep with their hands resting under their heads." Excavators found only skeletons without skulls or else human skulls without skeletons. The skulls show that Lepenski Vir man had big brow ridges. Stag antlers were placed in the graves with the human remains.

Photos © Jean Vidal, Paris

The rectangular hearths (right) found inside each house measure about 1 metre by 50 cms (3 ft by 18 ins) and are surrounded by curious "A"-shaped settings. According to certain archaeologists these may have had a symbolic meaning, but others think they served a utilitarian purpose as sockets for struts supporting cooking utensils.

the poles forming the frames of the walls and fulfilled a function similar to the metal sleeve joints that modern campers use in frame tents.

All but four of the houses faced towards the west with the largest side turned towards Mount Treskavac in such a way that the prevailing east wind did not blow through the entrances but was deflected along the sides of the houses. With its carefully planned and thought out construction, its standardized workmanship, its use of applied geometry and the ease of movement allowed for in the interiors of the houses, Lepenski Vir is almost a "modern community" of pre-history.

The Lepenski Vir people were wild fruit gatherers, hunters and fishermen. But it is possible that before their culture came to an end, they cleared some tracts for a rudimentary form of agriculture and cattle-rearing.

It has not been possible to reconstitute the rites practised in the home sanctuaries. Fish, stags and dogs were sacrificed. These are the only animals depicted in the sculptures and remains of all three have been found near the altars.

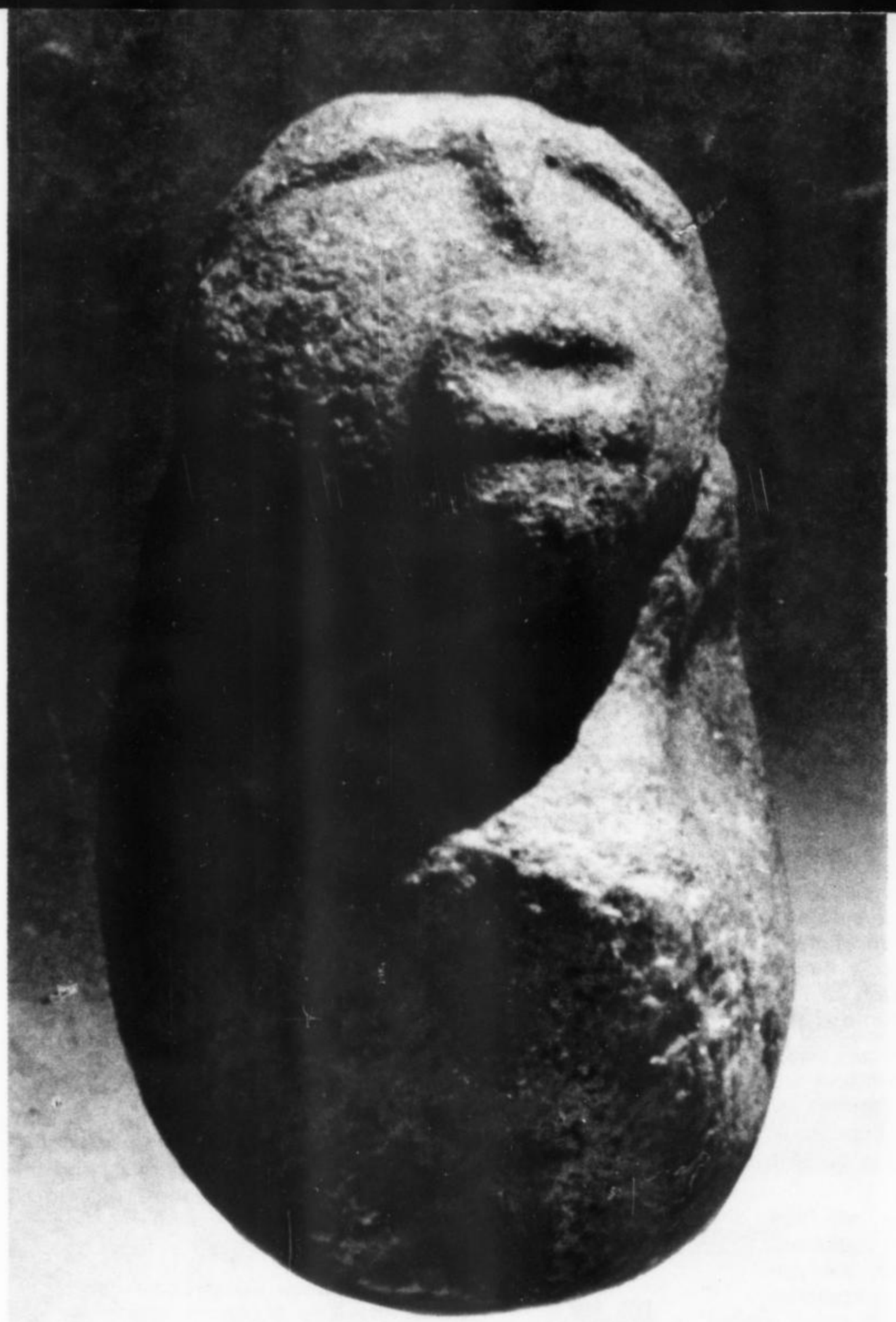
The Lepenski Vir people were buried in their houses. They lay in graves beside the fire, in Srejovic's words, "as though they had fallen asleep with their hands resting under their heads."

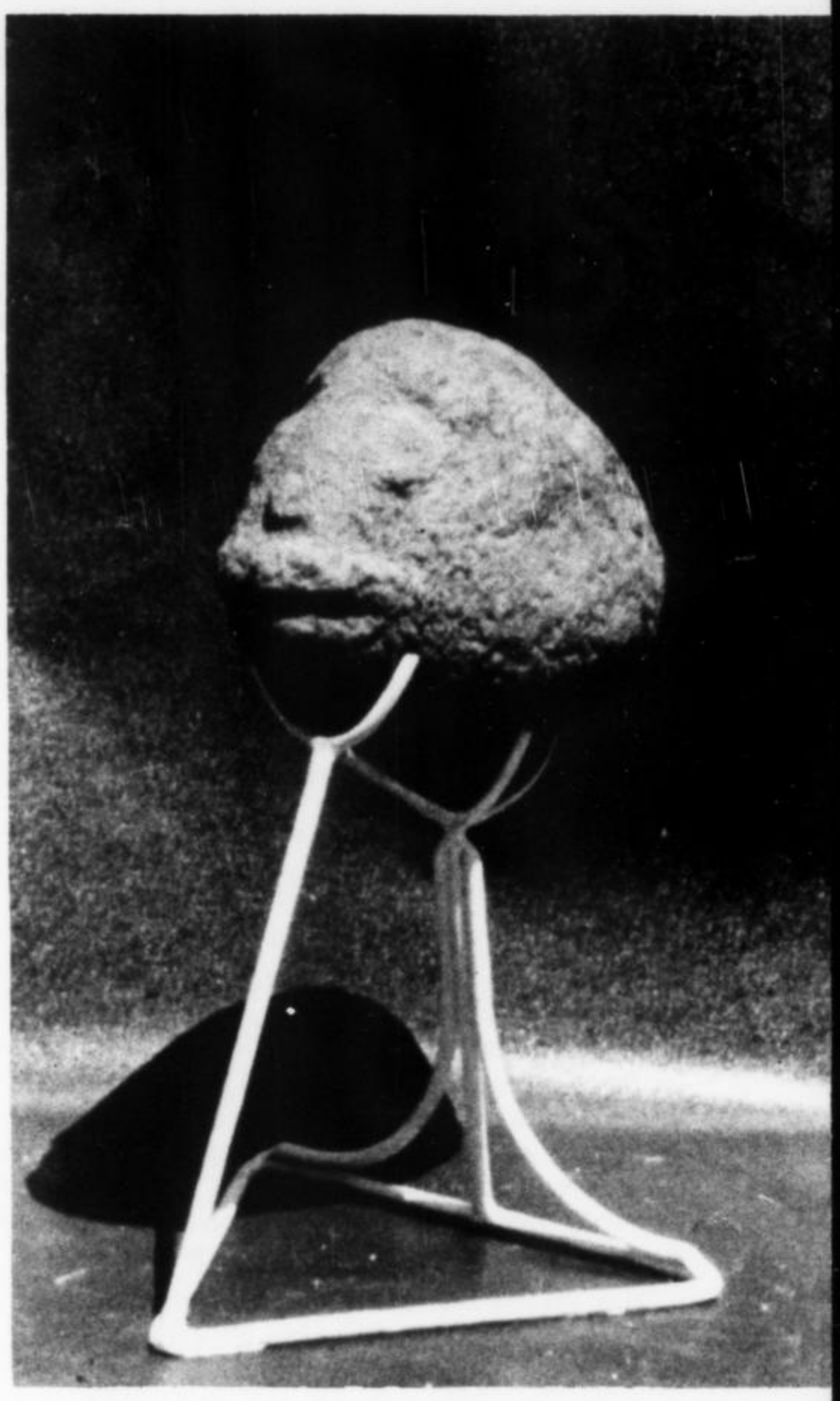
In the oldest clusters of dwellings excavators found no skeletons but only parts of skulls. If we accept that the layers in which these remains were buried had never previously been disturbed, it seems probable that only the heads of the dead were preserved. Subsequent generations followed the same custom, but in later periods the inhabitants sometimes buried the whole skeleton and sometimes preserved "the myth of the head" by burying skeletons without skulls, or skulls without skeletons. The antlers of a stag were invariably placed in the tomb beside the human remains and sometimes the animal's complete skull as well.

The sculptures uncovered at Lepenski Vir are of great interest. Most of the human and animal heads are life size, a remarkable fact considering that all previous prehistoric sculptures have been miniature in size.

The sculptor of Lepenski Vir took for his raw material large stones that had been rounded and polished by the action of the river. He infused life into them without altering their fundamental structure. Dragoslav Srejovic believes that the artist was obliged to respect the original form of the stone, which was an object of cult worship.

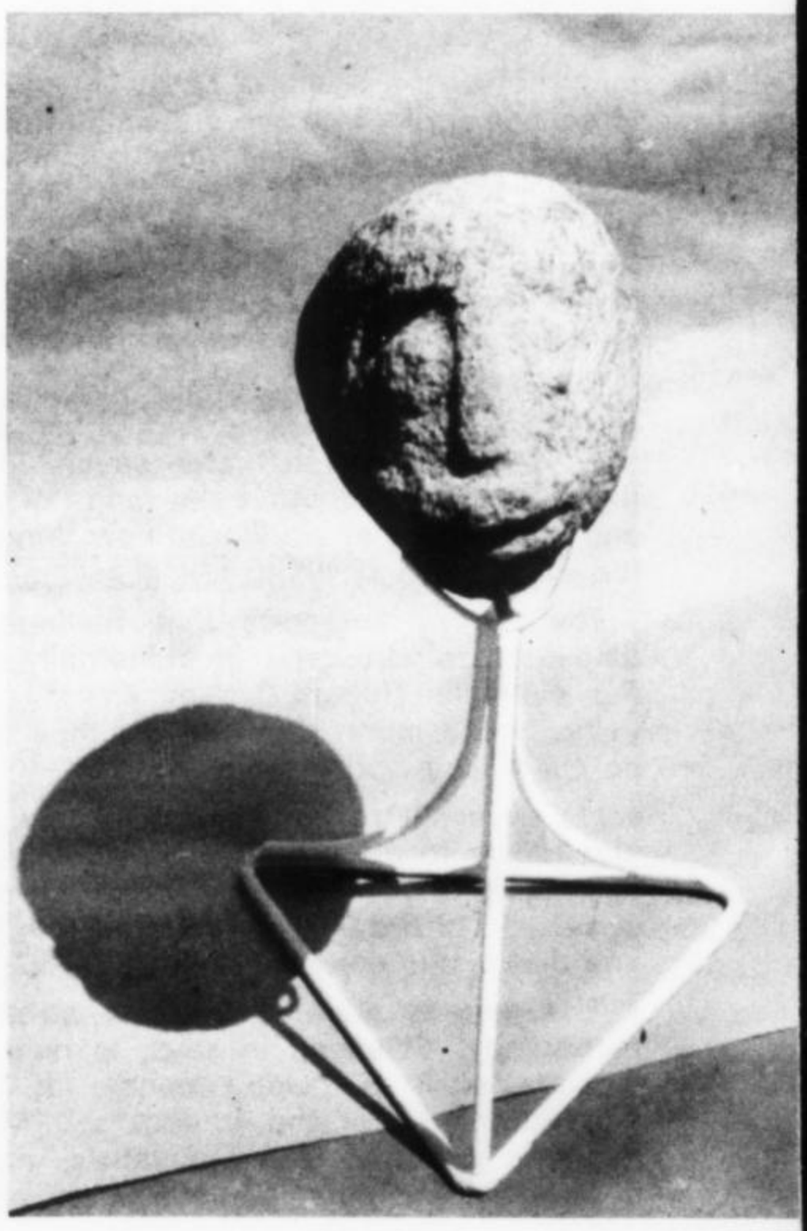
Thanks to the help afforded by the government of Yugoslavia, Lepenski Vir will be saved from the flood waters. Soon the settlement is to be transferred to a nearby site out of reach of the new water line of the Danube. ■





THE MOURNFUL FACES OF LEPENSKI VIR

Eight thousand years ago, the men of Lepenski Vir produced these carved images, using as their raw material the rounded, yellow sandstones they took from the river bed. Some thirty of these strange sculptures have been discovered ranged around the hearths of the dwellings. The heads vary in size from 57 cm. (almost 2 ft.), shown on left, to fist sized or smaller figures. Most are life size. Bizarre figure, top left, evokes both man and fish.



Photos © Jean Vidal, Paris

Non-scientists dissect science

AT a time when space research has been hotly criticized as an excessive, even wasteful expenditure of vast sums of public money, it is of special interest to note that in the latest issue of "Impact of Science on Society", Unesco's science quarterly (1), many people from developing countries feel that space research—including moon shots—is highly worthwhile. This point of view, admittedly based on a small sampling, gives an additional dimension to last month's issue of the "Unesco Courier" on "Spin-off, the fruit of space research" (March 1970).

The views favouring space research and moon travel are among the numerous comments on science and technology in all their aspects published by "Impact" in a significant issue entirely devoted to the theme "Non-scientists dissect science".

The "Impact" survey presents the opinions of "the average citizen" and of notable "non-scientists", including novelist-poet Robert Graves, painter Joan Miró, Kenyan leader, the late Tom M'boya, and philosopher-statesman Charles Habib Malik of the Lebanon.

On the question of space research, Mochtar Lubis, publisher of the Djakarta daily, "Indonesia Raya", declares: "I cannot agree with the criticisms that have been levelled against the great sums now being spent on space and nuclear research . . . For the first time in his long history, man is within reach of the stars . . . This newly-gained freedom, this vast extension of our horizons, is bound to have great effects on our old habits of thinking, on our old attitudes and on the familiar relations between nations."

Mrs. Gerónima T. Pecson, Philippine civic leader, agrees with him. "Much has already been accomplished in the exploration of space," she says. "The recent fantastic flights to the moon prove the range of the power of science and its promise of wonderful new things in the future. Let the exploration of outer space go on."

The survey suggests that feelings against the moon landings are strongest in industrially-developed countries. For example, Robert Graves sharply disagrees about the value of the moon flights and lumps them into a category he calls "show-off science".

He says: "It reminds me of a man who leaves his wife and family to starve while he goes out and fights battles against strange foes. Until we have got this world in some sort of order, we should abstain from such expensive and dangerous nonsense."

The famous novelist hits out strongly at science and technology. Science, he says, is now dominated by base motives, such as making money. It "has gradually fallen into the hands of the traders" . . . "Men of broad vision, the true creators and innovators, have long ceased to control the evolution or uses made of science."

Robert Graves decries the destruction by technology of human dignity and individuality and of the warmth of the home, with people now condemned to live in unnatural "little life-boxes". Technology, he maintains, is responsible for the enormous flood of populations into cities: "Science and technology have themselves created the problem that science and technology have been vainly trying to solve."

Tom Mboya, in what was perhaps the last article he wrote before his assassination in July 1969, comments that little has been done—and has often been wrongly done—in bringing the benefits of science and technology to African peoples. He pleads for technology designed to meet the needs of African peoples, not just merely exported to them. "Importation of technology without appropriate local research and development," he says, "can lead to a painful lopsided society, where there is concentration of modernity in a few cities while the rural areas remain practically as they have always been."

Humanists have an important say in this issue of "Impact."

Miguel Angel Asturias, 1967 winner of the Nobel Prize for literature, calls for a closing of the gap between the sciences and the humanities, through a re-encounter between scientists and non-scientists, intellectuals and technicians which, he says, would offer a brighter prospect for the settlement of the problems of the Third World.

Charles Habib Malik, former president of the U.N. General Assembly and now professor of philosophy at the American University of Beirut, considers that "the great danger today is that the enormous and absolutely merited prestige of science and technology might delude scientists into believing. . . that they are the absolute masters of the universe."

Professor Malik sees three areas of danger in the progress of science: "the possibility of scientific development abolishing privacy altogether, so that not only where I am and what I am doing, but even what I am thinking and feeling can be penetrated and known at any time; the possibility of interfering with the genetic development of man; and the possibility of upsetting whole equilibria of nature, with great damage to our environment."

MANY of our readers—in particular, our scientific readers"—says the editorial in this issue of "Impact", "may feel that some of the criticisms of science and technology expressed by the non-scientists are unjust, illogical or manifest a lack of understanding of how science works, what it seeks to do and what it is capable of doing." However, "the significant point," says the editorial, "is that these stances exist, for whatever reasons, however justly and with whatever rational validity—and that the majority of them have a definite validity cannot be doubted."

The "non-scientists'" issue of "Impact" is the second of a trilogy of numbers devoted to exploring the alienation of science from society. "Impact's" previous number, "The Science of Humour, The Humour of Science" (No. 3, 1969) emphasized the humanizing role of humour in science—its role in helping to re-establish science in the mainstream of cultural life.

Scientists will reply to criticisms of non-scientists in the third number of the trilogy which will appear shortly (N° 2, 1970). In this issue, nine eminent scientists, among them the Nobel Prizewinner Alfred Kastler, rebut and sometimes endorse the opinions expressed by non-scientists, and also state their own views on the impact of technology on human life. This trilogy of "Impact" studies should help to clarify and give perspective to the troubled relationship between science and society—one of the critical questions of our time. ■

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(1) "Impact of Science on Society", Vol XIX (1969) N°. 4. Single copy: $1.00, 6/- (stg.), 3.50 F. Annual subscription: $3.50, 21/- (stg.), 12.50 F.

Letters to the Editor

MAN AGAINST NATURE

Sir,

Congratulations on the issue devoted to the defence of Nature (January 1969). My compliments are all the more sincere coming from someone whose country's plants and animals have suffered and still suffer from the depredations of man. Descriptions of Chile written at the time of the Spanish conquest, in colonial times and at the start of the 19th century all describe the unique beauty and rare specimens of plant and animal life in Chilean forests, including a number of animals today all but extinct.

Most of the trees in Chile's central mountainous region have been felled. Erosion is widespread and deserts are expanding, especially towards the south. Unique plants on the Juan Fernández islands (on one of which the mariner Alexander Selkirk, prototype of "Robinson Crusoe", was marooned) have vanished.

The National Committee for the Defence of Chilean Flora and Fauna has endeavoured to impose eleventh-hour protective measures, but these are still not generally observed. The world indeed needs a well-organized International Committee for the Defence of Nature, as the authors of articles on man's ravages point out in your issue.

Dr. Luis Bisquertt
Vice-President
International Federation
of Physical Education
Santiago de Chile

'FISHY' INSCRIPTION FROM EASTER ISLAND

Sir,

May I be allowed some observations concerning the article on Easter Island (Special Anthology number, August-September 1969). The author, Alfred Métraux, and I worked together on the island in 1934 as joint members of a Franco-Belgian research expedition organized by Prof. Paul Rivet of the Musée de l'Homme in Paris.

My admiration for the accomplishments of the "Unesco Courier" is such that I feel obliged to point out a number of mistakes which mar the presentation of the subject. The article by Alfred Métraux, of course, is above reproach, but not so the accompanying illustrations and captions.

The photo of the wooden fish engraved with symbols was used when the article first appeared in the "Unesco Courier" in 1956. I should have objected to its use at that time, but the matter slipped my mind, and I regret this all the more now that the error has been repeated. The fish is a crude forgery and the so-called Easter Island characters it bears are either clumsy copies or mere inventions.

As for the water colour by Pierre Loti (facing page), it was done to please the actress Sarah Bernhardt and has nothing in common with the fine sketches executed on the island by the same artist under his real name, Julian Viaud, as a midshipman on the French frigate "Flore".

Loti's poetic account of Easter Island, in his book, "Reflets sur la sombre route", makes no mention of statues standing on the shore. These, as Loti relates, "have all been toppled over and broken". Nor does he refer to the group of islanders surrounded by human skulls depicted in the water colour. Finally, the statues towering over the islanders in no way resemble the real monuments.

Loti painted a pretty picture—scientifically absurd notwithstanding—to please a beautiful and famous lady, and for that he may well be excused. But the "Unesco Courier" with its reputation for factual accuracy should not have been caught napping.

Henri Lavachery
Hon. Professor of Ethnology
and Primitive Arts
University of Brussels, Belgium

Further research has confirmed Prof. Lavachery's assertions. We regret that we were misled into believing in the authenticity of the fish-shaped wooden tablet. In the view of Prof. Kenneth P. Emory, Chairman of the Dept. of Anthropology at the Bernice P. Bishop Museum, Honolulu, the fish "was made simply to sell to visitors, bearing crudely executed copies of characters of the Easter Island script with which the present-day inhabitants are familiar through photographs of the old inscribed tablets..." Prof. Thomas Barthel, Director of the Institute of Ethnology at the University of Tübingen, Fed. Rep. of Germany, author of an exhaustive study on the writing inscribed on the Easter island tablets, agrees that the fish tablet is not an authentic work and was probably forged between 1900 and 1930.—Editor.

FORUM FOR YOUTH

Sir,

How about a "Letters to the Editor" page especially inviting comments from youthful readers?

M.N. Smart
Salt Lake City, U.S.A.

GANDHI'S INVOLVEMENT IN POLITICAL ISSUES

Sir,

Some of the articles in your special issue on Gandhi (October 1969), particularly those by non-Indian scholars, are fascinating. I belong to a family that has a long tradition of adherence to Gandhian outlook and principles. To a sage whose mission it was to give to others the message of peace and brotherhood, of love and service, any political change, a united or divided India, should not have mattered at all. It does occur to me at times that Gandhi's involvement in political issues has left sad traces.

Some of my friends and associates, who are opposed to our political thinking, often put questions to me for which I do not find any satisfactory answer. For instance, I am asked how I am to explain the incompatibility of some of Gandhi's utterances with his creed of "non-violence". During communal riots in 1945, Gandhiji observed: "If Hindus had the right to be killed, they had the right to kill." In 1947, on the outbreak of hostilities in Kashmir, he stated: "Let Sheikh Abdullah and his associates fight for their homeland."

I am asked why, when India took over the State of Junagarh in defiance of the decision of the Muslim ruler to accede to Pakistan, on the grounds that the ruler had acted against the wishes of his Hindu subjects, Gandhiji did not condemn this as an act of violence. I am further asked why Gandhiji went to Kashmir to persuade its Hindu ruler to accede to India in disregard of the wishes of his Muslim subjects.

Belief often obscures reality. Do these utterances of Gandhiji and his involvement in politics point to his deeper political and cultural motivations? And what were those motivations? None would dispute the fact that all great personalities have had weaker facets, a natural consequence of devotion to a cause and of sincerity. I believe, and I hope many of your readers will agree with me, that in the rational assessment of the facts of his life, of the strong and weak sides of his personality, lies the real greatness of a personage.

A.H. Rathore
Rawalpindi, Pakistan

'COURIER' IN SWAHILI

Sir,

What I enjoy most about the "Unesco Courier" is its global outlook and coverage, and the fact that it keeps me in touch with modern ideas and attitudes.

Your presentation of major world problems is particularly worthwhile, as in the case of Unesco's efforts to protect and preserve the cultural and artistic treasures and traditions of different countries; what Unesco is doing to combat racial prejudice and other forms of discrimination; world efforts to solve the crisis of food and people; the promotion of human rights, of which your November 1968 number was a striking example.

To ensure that the "Unesco Courier" is known and read throughout the world, would you please add more language editions. I suggest one should be published in Swahili. People all over the world are anxious to get to know one another better, to understand the ways and customs of others and why they have adopted their own special modes of life.

E.M. Salinwa
Iringa, Tanzania

EXCELLENT TEACHING AID

Sir,

The "Unesco Courier" is an excellent teaching aid.

May Philosof
Rochester, N.Y., U.S.A.

Sir,

I have always found your magazine very informative and educational. Teachers and students borrow it frequently from the library where I send it after reading. Keep up with the good work.

Fr. Gerard Rixhon
Jolo, Sulu
Philippines

UNESCO NEWSROOM

'Turning Point' for world education

With a population of almost 1,500 million below the age of 15, the world manages to give barely a quarter any primary education at all—and less than one in 12 any secondary schooling. This is one of the disquieting facts revealed in "Turning Point," a 30-minute television film produced by Unesco for International Education Year 1970 (1). The film reminds the world how much remains to be tackled on the education front: shortage of teachers and equipment, inadequate planning, resistance to change, outdated teaching methods and programmes. It also shows more hopeful aspects: the increasing use of audio-visual aids and the new interest and expansion in lifelong education, for example.

(1) 16 mm. film in black and white, with commentaries in English, French. Spanish or Russian. Available from Unesco/RVI, Place de Fontenoy, Paris (7e).

30,000 towns support IEY

Throughout this year, the United Towns Organization, which promotes links and friendship between the world's cities, is launching programmes to support the objectives of International Education Year (IEY) 1970. This year's theme for the annual "World United Towns Day"—celebrated this month by 30,000 towns and cities—will highlight the aims of the IEY.

Astronautical dictionary in seven languages

An astronautical dictionary, the first of its kind, has just been published by the International Academy of Astronautics (1). Prepared by 100 scientists from 9 countries, it comprises nearly 5,000 English scientific and technical terms and their equivalents in Russian, German, French, Italian, Spanish and Czech. A legal section contains 900 entries and corresponding translations.

(1) "Astronautical Multilingual Dictionary of the International Academy of Astronautics." Academia Publishing House of the Czechoslovak Academy of Sciences, Vodickova 40, Prague 1-Nové Mesto, Czechoslovakia. Price: $37.50, £13.10, 207F.

Smallpox retreating

Smallpox has declined by almost 60 per cent during the first three years of the world-wide eradication campaign launched by WHO in 1967. Cases dropped from 128,300 in 1967 to some 56,000 in 1969, and countries reporting the disease, from 43 to 29.

Chad protects its antelope herds

Chad has opened a wildlife reserve in its northern desert to protect the grazing area and migratory routes of the addax and the oryx, two species of antelope. Research by the Food and Agriculture Organization showed that 90 per cent of the country's herds (10,000 addax and 40,000 oryx) had been killed in the past 20 years.

'Tidal' movements of the continents

Pulled by the sun and moon and pushed by the sea, the land masses of the earth rise and fall like the oceans every day. Columbia University scientists studying the continental United States have found that the land rises and falls an average of 12 inches twice daily. Using instruments with the sensitivity and long-term stability to measure over long periods, they carried out the most detailed measurements ever made of these solid-earth tides. The earth tides are greatly influenced by ocean tides, even at points far inland, and also indirectly by atmospheric pressure and temperature variations.

Science and the future

Scientific events of the past year and scientists' predictions for the future are presented in non-technical terms in the recently published "1970 Britannica Yearbook of Science and the Future" **(Encyclopaedia Britannica, Inc., Chicago, U.S.A.; 448 pages, $12.50.)** The Yearbook's 18 articles, whose authors include two Nobel prize winners, cover many subjects of current significance such as space exploration, the brain, oceanography, sleep and dreams, archaeology, game theory and molecular biology. A 172-page "Science Year Review" analyzes major scientific achievements and activities between July 1968 and June 1969.

Fish farming on 'the roof of the world'

Chinese carp, introduced into the waterlogged rice paddy fields of Nepal, are helping to increase the protein content of Nepalese diets and to provide a double crop from the same land. At Pipley, 75 miles from Katmandu, an FAO team, has established Nepal's first commercial fish farm, comprising nine man-made fish ponds which are expected to produce some 40 tons of fish annually.

Flashes...

■ *The world fish catch for 1968 attained a record 64 million metric tons—3,300,000 tons more than in 1967—says a recent FAO report.*

■ *An Institute of educational research is being set up in Abidjan, Ivory Coast, with aid from the U.N. Development Programme and Unesco.*

■ *Soil erosion—often the result of man's misuse—affects 15 per cent of the world's agricultural land, causing an annual loss of over $4,000 million, reports FAO.*

■ *Six Unesco specialists are to help launch a technical education project in Kuwait which needs to train 1,000 technicians within the next five years.*

■ *The sea floor between Japan and Taiwan may contain one of the world's richest oil reservoirs, according to a recent geophysical survey of the East China Sea and the Yellow Sea.*

BOOKSHELF

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Translated by Burton Watson

Columbia University Press, New York and London, 1968 ($10.00; 90/-)

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■ **Anthology of Contemporary Romanian Poetry**

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Dufour Editions, Chester Springs, Penn. ($6.50)

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INDIA

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By Richard Lewis

Photographs by Helen Buttfield.

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(Guide for their selection, purchase, use and maintenance)

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XUM

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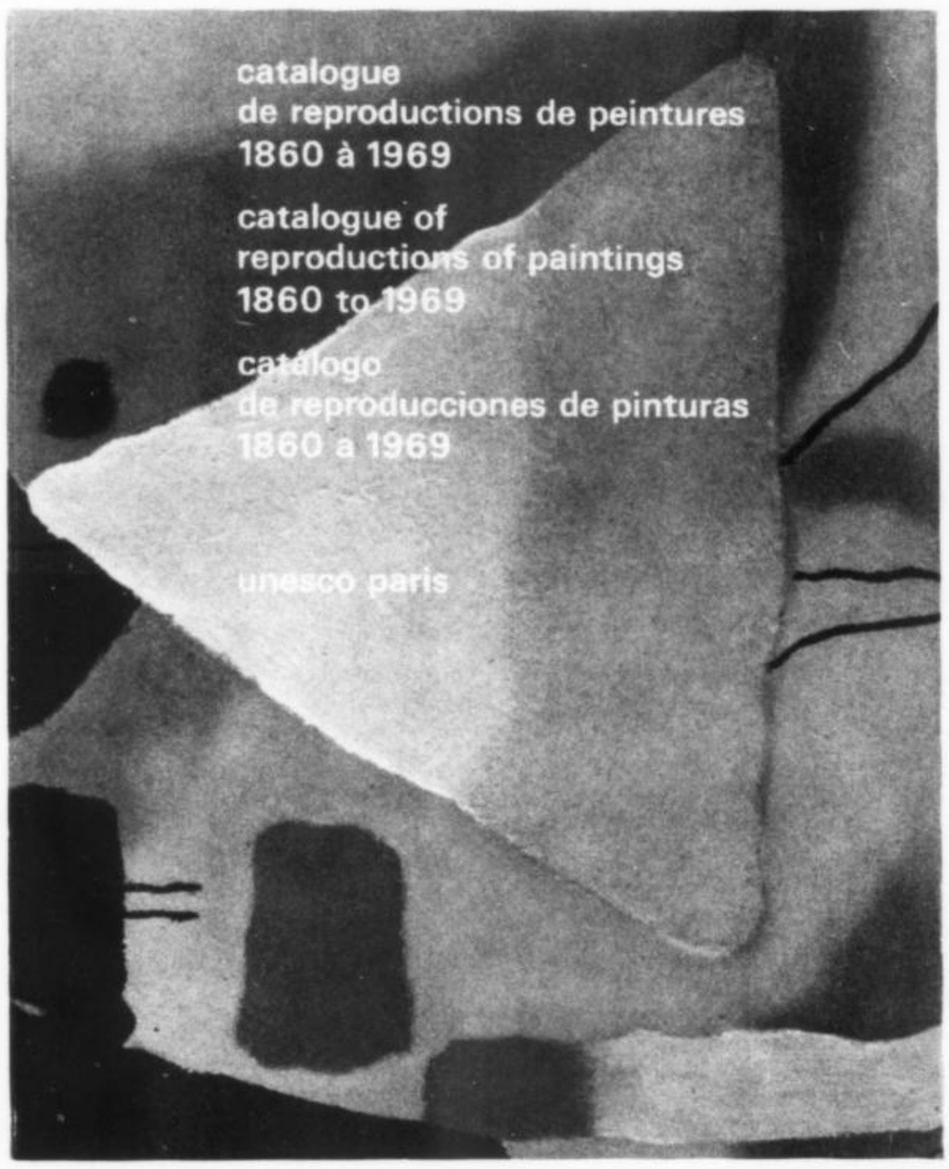

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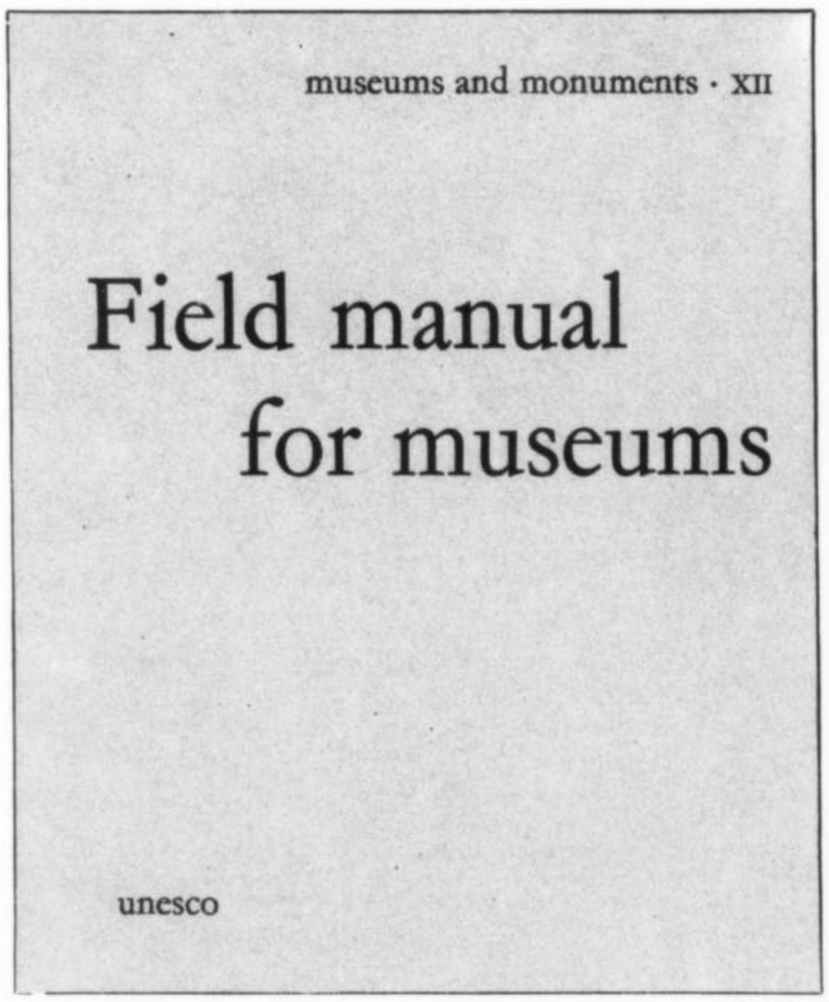

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XUM

Photo © Paul Almasy, Paris

AL-AZHAR, CAIRO LANDMARK FOR 1,000 YEARS. Capital of Egypt almost since the birth of Islam, Cairo is also a great modern city which has managed to preserve in its many styles of architecture the impress of civilizations and cultures that helped to mould it during the past 1,000 years (see article page 10). Here, the slender minaret of the ancient mosque of Al-Azhar (The Resplendent) rises against the skyline. Founded in 970 A.D., Al-Azhar has long been one of the greatest universities of Islam.

XUM

KUM